U.S. INSPECTED MEAT PACKING PLANTS

A Guide to Construction, Equipment, Layout

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PREFACE

The Federal Meat Inspection program has been maintained continuously since the Meat Inspection Act was first approved in 1906. On July 1, 1959, inspection was conducted in 1,334 establishments located in 546 cities and towns. These included 529 slaughtering establishments and 805 establishments engaged in meat processing only.

During the fiscal year 1959, nearly 100,000,000 animals were slaughtered (approximately 80 percent of the total commercial slaughter in the United States), and 17,500,000,000 pounds of meat food products were prepared under supervision of the Federal meat inspection service.

This handbook is designed for use by meat inspection personnel, meat packing plant operators, packing plant architects and engineers, and others interested in control programs involving slaughtering and meat processing operations.

The paragraphs are numbered to facilitate reference in correspondence between the Meat Inspection Division and meat packers or their architects and engineers.

A list of specifications or notations covering meat inspection requirements not ordinarily shown in drawings themselves is included in the appendix. This list, which in some instances repeats in condensed form some of the information in the explanatory portion of the publication, is for the convenience of architects and engineers. Specifications accompanying drawings submitted for approval by the Meat Inspection Division should be selected from the list in this handbook rather than the usual builder's specifications.

Prepared in the Meat Inspection Division, Agricultural Research Service, U.S. Department of Agriculture

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INTRODUCTION

Administration of Federal Meat Inspection

1. Federal meat inspection is administered by the Meat Inspection Division of the Agricultural Research Service. The administrative offices are in Washington, D.C.

Purpose of Federal Meat Inspection Act

2. The purpose of the Federal Meat Inspection Act approved March 4, 1907, is stated in the Act as—

> "* * * for the purpose of preventing the use in interstate or foreign commerce * * * of meat and meat food products which are unsound, unhealthful, unwholesome, or otherwise unfit for human food * * *"

The Act is intended to assure a healthful and wholesome meat supply in interstate and foreign commerce. The inspection maintained at a plant covers the entire production of the plant regardless of the proportion shipped in interstate or foreign trade.

Scope of Federal Meat Inspection Activities

3. The Act of 1907 applies only to cattle (including calves), sheep, swine, and goats, and the edible products derived from their carcasses. Its provisions are, however, extended to horses by the Horse-Meat Act approved July 24, 1919. The preparation, processing, and handling of horse meat must be conducted in establishments wholly separate and apart from those in which products derived from cattle, sheep, swine, and goats are prepared. Wild animals, fish, and game are not subject to provisions of the Act. Food products derived from such species are subject to State laws and local ordinances, and, if shipped in interstate or foreign commerce, are subject also to the provisions of the Food, Drug and Cosmetic Act, administered by the Food and Drug Administration of the U.S. Department of Health, Education, and Welfare. Dressed poultry and poultry products are subject to the provisions of the Poultry Products Act of August 28, 1957, if offered for sale in interstate or foreign commerce or to designated major consuming areas.

Cost of Inspection Services

4. The cost of Federal meat inspection is paid partly by the Government and partly by the packers. The Government pays the salaries of inspectors for services performed during regular hours. However, the packer is required to compensate the Government for the cost of overtime inspection. The cost of preparing, equipping, and maintaining the plant in condition to meet inspection requirements, and losses resulting from condemnation of animals, carcasses, or products must be borne by the owner or operator of the plant.

Exemption From Provisions of Meat Inspection Act

5. Under certain specific provisions of the Meat Inspection Act, retail meat dealers and farmers may make interstate shipments of meats or meat food products without operating under Federal inspection; however, the Secretary of Agriculture may, at his discretion, require that such persons apply and qualify for the inspection. The term "farmer," insofar as Federal meat inspection is concerned, is defined in the Act.

Application for Inspection Service

6. The owner or operator of any meat processing plant who contemplates engaging in interstate or foreign trade in meat or products derived from cattle (including calves), sheep, swine, goats, or horses, or furnishing such products to Federal agencies, should send detailed information relative to the nature and volume of the proposed operations to the Director, Meat Inspection Division, Agricultural Research Service, U.S. Department of Agriculture, Washington 25, D.C. In reply, he will be informed whether the proposed business requires or entitles him to Federal inspection. If so, he will be furnished a form on which he may make formal application therefor. With such application he will be required to furnish plans and specifications of the proposed plant, as hereinafter indicated. Until he receives information concerning the eligibility of the plant for the inspection, including the approval of plans and specifications, it is highly important that the applicant refrain from acquiring property, or undertaking construction, or remodeling for the contemplated operations. Failure to observe this suggestion may result in unnecessary expense and inconvenience.

DESCRIPTION OF PLANS AND SPECIFICATIONS THAT MUST ACCOMPANY APPLICATION FOR INSPECTION

Submittal of Plans

1. Blueprints of drawings with specifications (in triplicate or more) that fully and clearly illustrate the applicant's plant as he proposes to have it constructed and equipped for the inspection must be submitted to the Meat Inspection Division at Washington, D.C., with the application for inspection (in duplicate). Blueprint drawings are preferred since the drawings are later converted onto microfilm records, and blueprints are most suitable for this purpose. The drawings shall include the following:

Plot Plan

2. Plot plan of the entire premises showing location of all buildings, roadways, railroad trackage, streets and alley adjoining the plant, streams, catch basins, water wells, reservoirs, and storage tanks. If nearby buildings exist on adjoining property, their height and use should be indicated. The character and surfacing of roadways, driveways, streets, and the paving of vehicular loading areas, and alleys should be indicated. The north point of the compass is to be shown.

Floor Plans

3. Floor plans of each level in the various buildings showing the locations of walls, partitions, posts, doorways, windows, and other openings; floor drainage inlets and gutters; rail systems for conveying carcasses, parts, and product; chutes; location of the principal pieces of equipment; hot and cold water hose connections; and hand-washing facilities (lavatories). The slope of floors to drainage facilities should be indicated by grade lines. The location of sectional lines should be shown on the floor plans. For convenient reference, the *north point should be shown on the floor plans.*

Roof Plan

4. Roof plan showing skylights, vents, and other pertinent information.

Section Drawings

5. Cross sections and longitudinal sections of the various buildings showing the character and finish of floors, walls, partitions, and ceilings; heights of ceilings; the principal pieces of equipment; and rail heights, especially in the slaughtering departments, to show their relation to equipment such as viscera inspection tables, inspectors' and operatives' foot platforms, and the like.

Elevation Drawings

6. Exterior elevations on each side of each building showing locations and sizes of doors, windows, and other openings.

Specifications or Notations

7. Specifications or notations (see pages 34–38) covering features such as source of water supply; method of sewage disposal; description of the trapping and venting of drainage lines; description of hot water system; means to dispel steam and vapor in workrooms; and screens for outer openings that would admit flies. Notations applying to the project should be typewritten on separate sheets 8″ x 10½″ and attached to the set of drawings, the revised sheet, or the copy sheet with attached paster drawings, as the case may be.

Size of Drawings

8. The drawings illustrating the layouts should be on sheets *not larger than 30″ x 42″.* If the size of the project is such that all pertinent information cannot be fully detailed on one sheet, two or more sheets should be used. The "cut-off" in such cases must be adequately identified with match lines with a sufficient overlap shown on each sheet to facilitate proper interpretation of the drawings.

Legibility

9. Legibility and sharp clear lines on the drawings are essential. The Washington files are maintained in the form of microfilm records only, and satisfactory film cannot be obtained from hazy drawings or those with insufficient contrast between the lines and the blueprint background. Any lettering on the drawing should be clearly distinct for reproduction on film.

Scale

10. Use of the ¼-inch to a foot scale is preferable in preparing drawings of layouts presented for consideration. No objection will be interposed to the use of the ⅛-inch to a foot scale if in developing the layout it is found that its use is advantageous for the overall illustration of the project and that it would tend to minimize the number of sheets required for the set of blueprints; provided, that layouts of such principal departments as slaughtering, canning, boning, sausage, employee welfare rooms, and the like where considerable equipment or operations are involved shall be detailed on a separate sheet at the ¼-inch scale with a proper notation placed on the ⅛-inch scale drawings. Overall floor plans and plot plan may be developed on a smaller scale if necessary to confine them to sheets no larger than 30″ x 42″.

Changes and Revisions

11. *The Washington office discards the original approved drawings after they have been microfilmed.* Accordingly, when changes are proposed in areas for which drawings have been previously approved and converted onto microfilm records, one of the fol-

lowing types of revised drawings should be submitted for review and consideration:

(*a*) A completely revised sheet or sheets that show the existing construction and equipment which will remain unchanged, together with the proposed alterations and/or additions (preferable method), or—

(*b*) A copy of the previously approved sheet or sheets with previously approved pasters affecting the area and pasters of the proposed changes superimposed and securely affixed to the affected areas in a manner not obscuring essential data.

(*c*) Paster drawings must be prepared to the same scale and presented on a background similar to that of the originally approved drawings to facilitate microfilming operations. When paster drawings are of a different background than the originally approved drawings, proper recording on microfilm is difficult.

Rearrangement of Operations or Activities

12. Projects for expansion or remodeling often rearrange operations or activities in existing areas or additions to the extent that previously approved overall floor layouts are misleading for use in reviewing the sequence of operations and for evaluation of inspectional requirements. In these instances, it is desired that revised overall floor layouts illustrating existing facilities, as well as the proposed changes, be made part of the expansion or remodeling projects.

Approval Stamp Space

13. It is necessary that a contrasting space (white) at least $1\frac{3}{4}''$ x $2\frac{1}{2}''$ in size be provided on whole sheets of blueprints for the placement of the formal mark of approval. A similar space can be affixed to paster blueprints provided the arrangement will not obliterate any features shown on the whole sheet. Otherwise, the formal mark of approval will be affixed to the reverse side of the paster drawings.

Approval of Plans and Specifications

14. If the examination of the drawings and specifications shows that they meet the requirements, the formal mark of approval is placed on them and an approved set is returned to the applicant. The other two sets are retained for reference. To avoid possible costly changes, construction should be deferred until the drawings and specifications have been approved by the Meat Inspection Division.

Use of Competent Architect or Engineer

15. Because of the specialized knowledge required to design and construct a well-arranged meat packing plant, a competent architect or engineer experienced in laying out plans for operation under Federal meat inspection should be employed to prepare the drawings and specifications. Upon request, a list of architects and engineers who have prepared plans approved by the Meat Inspection Division will be sent to any person.

LOCATION OF ESTABLISHMENTS

Site

1. Slaughtering and meat processing plants shall be located (so far as practical) in areas reasonably free of objectionable odors, smoke, flying ash, dust, etc., such as are sometimes produced by oil refineries, city dumps, chemical plants, sewage disposal plants, dyeworks, paper pulp mills, and the like.

Accessibility

2. Adequate dustproof access-ways for automobile trucks, connecting the shipping and receiving areas of the plant to the public streets or highways, shall be available. If supplies or raw materials are to be received into the plant or finished product is to be shipped from the plant by rail, consideration should be given to arranging for suitable railroad spur tracks.

Separation

3. An establishment operating under Federal meat inspection must be completely separated from any other plant and buildings, whether used for industrial, commercial, residential, or other purposes. No communication by means of doorways, windows, stairways, elevators, or passageways, loading or unloading platforms, or loading courts is permissible.

Retail Business on Premises

4. If a retail meat business is carried on within the official premises of the establishment, it shall be so arranged that customers shall have access only to the room or rooms where such business is conducted and shall be excluded from the rest of the establishment. All meat and meat food product handled in the retail business shall be U.S. inspected and passed and so identified when brought into the market.

Expansion

5. In planning a plant, consideration should be given to providing space and an arrangement of buildings that will permit future expansion. To this end, coolers, freezers, processing departments, etc., should be so located that they may be enlarged without adversely affecting other departments.

Inedible Products Departments and Grease Catch Basins

6. Features such as the inedible products departments and catch basins for grease recovery should be suitably located in the rear of the plant so as to avoid objectionable conditions affecting the preparation and handling of edible products.

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Figure 1.—Well-located plant.

WATER SUPPLY, PLANT DRAINAGE, AND SEWAGE DISPOSAL SYSTEM

Water Supply

Potable Water Supply

1. The water supply must be ample, potable (passing the tests prescribed for potability in the "Drinking Water Standards" promulgated by the U.S. Public Health Service, Department of Health, Education, and Welfare, dated February 6, 1946, or any subsequent revision), and distributed throughout the plant under adequate pressure and in quantities sufficient for all operating needs. Both hot and cold water must be provided, the hot water from a central heating plant of sufficient capacity or from other suitable facilities capable of furnishing an ample supply of hot water. The mixing of steam and water at outlet is not acceptable for producing hot water used for such purposes as sterilizing equipment or areas contaminated by diseased material. Water from public water supply systems is usually, but not always, acceptable. If the water is supplied from private wells, the wells should be on the premises of the establishment and effectively protected from pollution. If chlorinators are required to assure a continuous potable supply, they should be the automatic type and provided with devices that inform the plant management and inspector when they have ceased to function.

Nonpotable Water Supply

2. A nonpotable water supply is a potential source of danger. If such a supply is necessary for fire protection or for the condensers of the refrigerating system, it should be kept separate from the potable supply. If a cross-connection between the two supplies is necessary, it must be one that will adequately safeguard the potable supply, and be acceptable to the Meat Inspection Division and local health authorities. Nonpotable water lines within buildings in which edible products departments are located should be avoided.

Vacuum Breakers

3. Vacuum breakers of an acceptable type should be provided on all steam lines and water lines connected to various pieces of equipment.

Plant Drainage

1. All parts of floors where wet operations are conducted shall be well drained. As a general rule, one drainage inlet should be provided for each 400 square feet of floor space. A slope of about $\frac{1}{4}$ inch per foot to drainage inlets is required for usual conditions. In areas such as beef sales coolers and other departments where a limited amount of water is used, the slope may be about $\frac{1}{8}$ inch a foot. It is important that the floors slope uniformly to drains with no low spots which collect liquid. Floor drains are not required in freezer rooms or dry storage areas. When floor drains are installed in rooms where the water seal in traps is likely to evaporate without replenishment, they shall be provided with suitable removable metal screw plugs.

Special Drainage Requirements

2. In certain departments, special floor drainage is required. For example, floor drainage valleys are essential under the dressing rails for hogs, calves, and sheep. Such valleys must be about 24 inches wide and integral with the floor. The valleys must slope at least ⅛ inch per foot to floor drains within the valleys. In so-called on-the-rail cattle slaughtering departments, floor valleys under the dressing rails are required unless the floor drainage is carefully localized, with drainage inlets placed advantageously beneath the dressing rails.

Sanitary Drainage Lines

3. Drainage lines from toilet bowls and urinals shall not be connected with other drainage lines within the plant and may not discharge into a grease catch basin. Such lines must be installed so that if leakage develops, it will not affect product or equipment.

Size and Construction of Drainage Lines

4. Drains for cattle paunch contents should be at least 8 inches in diameter to avoid clogging. Drains for hog, sheep, and calf stomach contents shall be at least 6 inches in diameter. Such drains shall not be connected to the regular plant drainage lines or to toilet lines. All other lines must have an inside diameter of at least 4 inches. Drainage lines within the plant must be constructed of cast iron or galvanized metal.

Traps and Vents on Drainage Lines

5. Each floor drain, including blood drains, must be equipped with a deep seal trap (P-, U-, or S-shape). Drainage lines must be properly vented to the outside air and be equipped with effective rodent screens.

Trunk Lines

6. Where several 4-inch drainage lines discharge into one trunk line, this line must be proportionately larger so as to handle efficiently the drainage discharged into it.

Plant Waste Disposal

1. An efficient method of disposing of plant wastes is essential. If permitted by local ordinance, plant wastes may be discharged into a municipal sewer system, and this is most desirable. If the discharge is into a stream, the flow of water must be sufficient at all seasons of the year to carry the sewage well away from the plant. If a private septic tank or sewage disposal system is used, it must be efficiently designed and operated so as not to produce objectionable conditions on or near the official premises.

Acceptance of Plant Waste System

2. The sewage disposal facilities must be acceptable to the local health authority having jurisdiction over such matters in the area. A letter from the proper health authority (State, county, city) indicating that the proposed sewage system is satisfactory must be submitted to the inspector in charge before inspection can be inaugurated at the plant.

Catch Basins for Grease Recovery

3. Catch basins for the recovery of grease shall be suitably located and not placed in or near edible products departments or areas where edible products are unloaded from or loaded onto vehicles. To facilitate ready cleaning, such basins must have inclined bottoms and should be without covers. They shall be constructed so that they can be completely emptied of their contents for cleaning, and hose connections for furnishing hot water for cleanup purposes should be provided at convenient locations near the basins. The area surrounding an outside catch basin shall be paved with impervious material, such as concrete, and provided with suitable drainage facilities. Suitable facilities, such as a blow tank, should be provided for the transfer of grease to the point of disposal after it is skimmed from the basins.

Disposal of Paunch Contents, Hog Hair, Blood, and Similar Waste Material

4. Waste material such as paunch contents, hog hair, blood, and pen manure must be disposed of without creating objectionable conditions, and the drawings or specifications must indicate how this will be accomplished.

PLANT CONSTRUCTION

Minimum Requirements

1. The building materials listed in this handbook represent minimum requirements. Variations are acceptable, provided substitutions equal or exceed minimum standards.

Materials

2. Materials used shall be impervious, easily cleanable, and resistant to wear and corrosion. Materials that are absorbent and difficult to keep clean are generally unacceptable in edible departments. Examples are wood, plasterboard, and porous acoustical-type boards.

Floors

3. Floors shall be constructed of (*a*) vitrified brick of good quality, bonded with acid-resistant waterproof mortar, and laid on a waterproof concrete base, or (*b*) dense, acid-resistant waterproof concrete. To prevent accidents, excessively smooth floors should be avoided. Good results are obtained by using brick or concrete floors with embedded abrasive particles in the surface. Concrete floors should have a wood float (rough) finish. Concrete or mortar floors that incorporate an approved latex or synthetic resin base have better than ordinary resistance to meat fats and acids.

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Coves

4. Coves with radii sufficient to promote sanitation shall be installed at the juncture of floors and walls in all rooms.

Interior Walls

5. Interior walls shall be smooth and flat and constructed of impervious materials such as glazed brick, glazed tile, smooth-surfaced portland cement plaster, or other nontoxic, nonabsorbent material applied to a suitable base. Walls should be provided with suitable sanitary type bumpers to prevent damage by handtrucks, carcass shanks, and the like.

Ceilings

6. Ceilings should be of good height (10 feet or more is desirable in workrooms). So far as structural conditions permit, ceilings shall be smooth and flat. Ceilings shall be constructed of portland cement plaster, large-size cement asbestos boards with joints sealed with a flexible sealing compound, or other acceptable impervious material. If the ceiling has exposed joists, the joists must be at least 36 inches on center and so designed that there are no excessive ledges or crevices which would be difficult to keep clean.

Window Ledges

7. Window ledges shall be sloped about 45° to promote sanitation. To avoid damage to glass in windows from impact of handtrucks and similar equipment, the window sills should be 3 feet or more from the floor.

Doorways and Doors

8. Doorways through which product is transferred on rails or in handtrucks must be at least 5 feet wide, except that doors used in connection with rails approximately 11 feet high must be at least 4½ feet wide. Doors must either be of rust-resistant metal construction throughout, or if made of wood, they must be clad on both sides with rust-resistant metal having tight soldered or welded seams. Door jambs shall be clad with rust-resistant metal securely affixed so as to provide no crevices for dirt or vermin and the juncture at the walls effectively sealed with a flexible sealing compound.

Screens and Insect Control

9. All windows, doorways, and other openings that would admit flies shall be equipped with effective insect and rodent screens. "Fly chaser" fans and ducts shall be provided over doorways in outside walls of food-handling areas that are used for shipping or receiving.

Rodent Proofing

10. Except in the case of solid masonry walls constructed of glazed tile, glazed brick, and the like, expanded metal or wire, not exceeding ½-inch mesh, shall be embedded in walls and floors at their junction. This mesh should extend vertically and horizontally a sufficient distance to exclude the entrance of rats and other rodents.

Interior Woodwork

11. Dressed lumber shall be used for all exposed interior woodwork.

Paint

12. All exposed interior wood surfaces shall either be painted with a good grade nontoxic oil or plastic-base paint, treated with hot linseed oil or with a clear wood sealer.

Stairs

13. Stairs in edible product-handling departments shall be of impervious construction with solid treads and closed risers and shall have side curbs of similar material, 6 inches high measured at the front edge of the treads.

PLANT LIGHTING, VENTILATION, AND REFRIGERATION

Lighting

1. Unrefrigerated workrooms shall be provided with adequate direct natural light and ventilation or ample artificial light and ventilation by mechanical means. Uncolored glass having a high transmissibility of light should be used in windows and skylights. To reduce glare, light diffusing and heat absorbing glass (blue) may be used in skylights and windows that are subjected to considerable sunshine. The glass area should approximate one-fourth of the floor area of a workroom. This ratio should be increased where there are obstructions, such as adjacent buildings, overhead catwalks, and hoists, which interfere with the admittance of direct natural light. Well-distributed artificial lighting of good quality is required at all places where, or at times when, adequate natural light is not available or sufficient. The overall intensity of artificial illumination in workrooms should be not less than 20 foot-candles. At all places where inspections are made or where special illumination is required to enable establishment employees to properly prepare products of any character to meet the requirements of the inspection, the illumination shall be not less than 50 foot-candles.

Ventilation

2. Adequate means for ventilation must be provided in workrooms and welfare rooms. This may be furnished by means of ventilating-type windows, skylights, or both, or by mechanical means such as air conditioning or a fan-and-duct system. In locations subject to dust and objectionable odors, such as those adjoining livestock pens, runways, and inedible departments, windows should be the fixed type. In

refrigerated workrooms where natural ventilation is limited and where a considerable number of operatives are continuously employed, as in large cutting and boning rooms and bacon-slicing rooms, a reasonable amount of mechanical ventilation with fresh air must be continuously supplied to prevent stagnation of air.

Fresh air intakes for workrooms and welfare rooms shall be so located that the air is not contaminated with odors, dust, smoke, etc. The intakes must be provided with effective filters to eliminate insects, dust, etc., and where indicated, a heating element for tempering the air in cold weather should be provided. Mechanical ventilating systems for nonrefrigerated work areas and welfare rooms that depend entirely on artificial means of ventilation shall have ample capacity to produce at least six complete air changes hourly.

Refrigeration

3. Sufficient refrigerated space must be provided to handle carcasses and product properly. A maximum temperature of 50° F. shall be maintained in such areas.

The type of refrigeration should be indicated on the drawings. If wall coils are installed, a drip gutter of concrete or other impervious material integral with the floor and properly connected with the drainage system shall be provided beneath the coils. If overhead refrigerating facilities are installed, insulated drip pans properly connected to the drainage system shall be placed beneath them. Floor-type refrigerating units must be placed within curbed and separately drained areas unless located adjacent to floor drains.

EQUIPMENT

1. Equipment must be constructed so that it can be readily kept clean. All surfaces contacting product shall be smooth, free from pits, crevices, and scale.

Acceptable Materials

2. Excepting such equipment as cutting boards, equipment must be constructed either of rust-resisting metal, such as 18–8 (300 series) stainless steel, or of plastic approved by the Meat Inspection Division. Galvanized metal, although acceptable in certain equipment, is not desirable because it is not adequately resistant to the corrosive action of food products and cleaning compounds. When used, galvanized metal must have the smoothness of high quality commercial hot dip.

Nonacceptable Materials

3. (*a*) Copper and its usual alloys are not acceptable in equipment used in connection with edible product.

(*b*) Cadmium is not acceptable in any manner or form in equipment used for handling edible product.

(*c*) Lead must not be used in equipment contacting edible product, except that it may be employed in dairy solder in an amount not to exceed 5 percent.

(*d*) Equipment with painted surfaces in the product zone is not acceptable.

(*e*) The use of containers or equipment made of enamelware or porcelain is not acceptable for any purpose in connection with the handling and processing of product.

Plastics and Resins

4. Plastic materials and resinous coatings must be abrasion- and heat-resistant, shatterproof, nontoxic, and shall not contain a constituent that will migrate to meat or meat product in contact with the material. Such materials must be approved by the Division's Chemical Control laboratory in Washington before use.

Gaskets and Packings

5. All gasketing and packing materials must be nontoxic, nonporous, nonabsorbent, and unaffected by food products and cleaning compounds. Such materials shall be installed in a manner resulting in a true fit to prevent protrusion of the materials into the product zone or creation of recesses or ledges at the gasketed joints.

DESIGN AND CONSTRUCTION OF EQUIPMENT

Product Zone

Accessibility for Cleaning

1. All parts of the product zone must be readily accessible to sight and reach for cleaning and inspection.

Provisions for Dismantling

2. Where necessary for proper cleaning and inspection, equipment must be easily demountable. To facilitate this dismantling, quick opening devices that require no tools or, at most, such simple tools as a mallet and an open-end wrench shall be provided. Bayonet joints, butterfly clamps, spring bolts, and other similar devices are desirable for connecting or closing parts of equipment. Where parts must be retained by nuts and bolts, the design shall provide for fixed studs with wing nuts, rather than bolts to a tapped hole.

Bearings

3. All bearings must be located outside the product zone and if adjacent thereto must be constructed with a readily removable seal at the entrance of the shaft into the product zone.

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Figure 2.—Stainless steel sausage meat truck.

BN-10733X

Figure 3.—Stainless steel smokehouses.

BN-10755X

Figure 4.—Continuous feed type sausage stuffer.

BN-10746X

Figure 5.—Modern type meat comminutor.

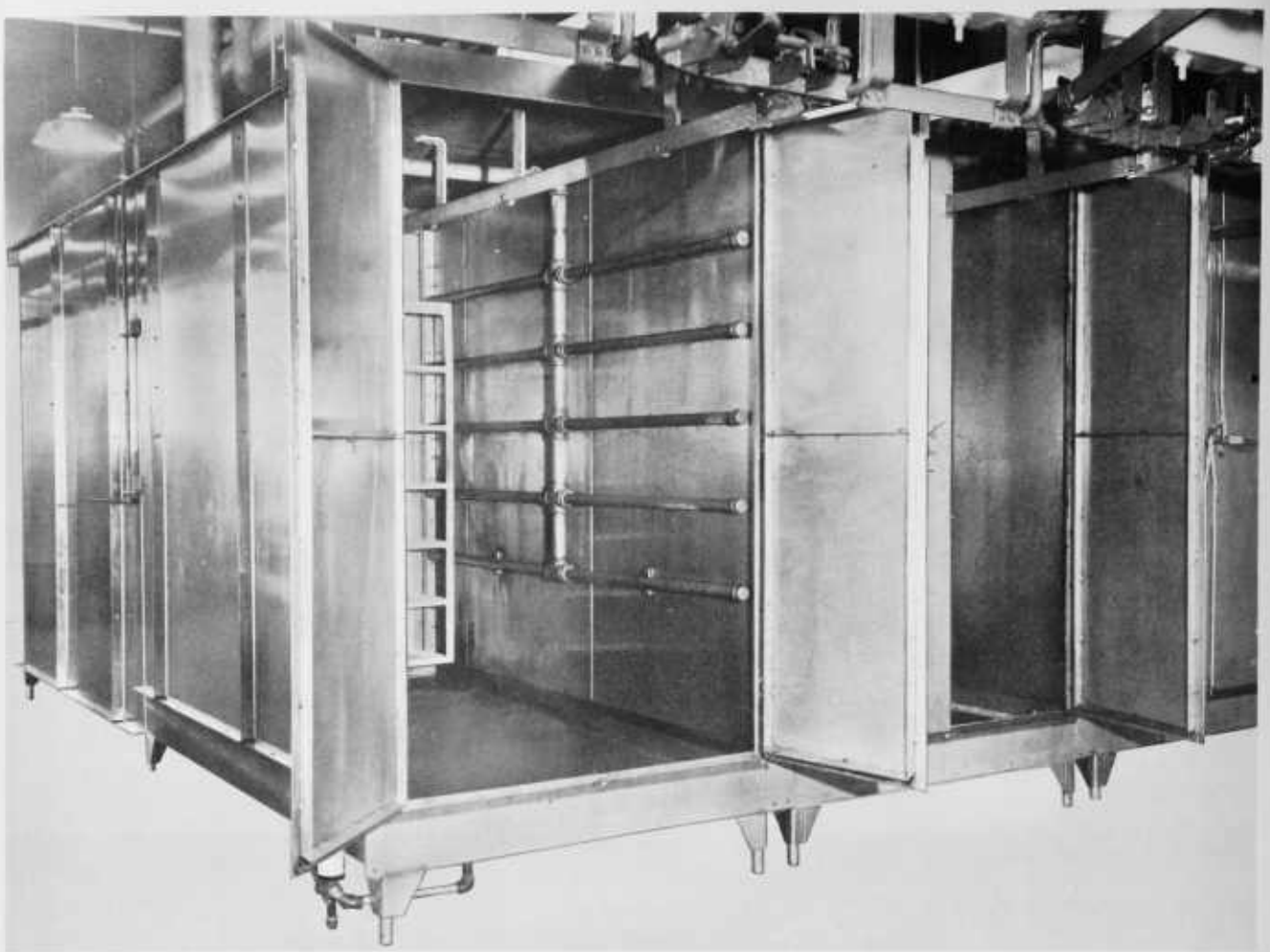

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Figure 6.—Stainless steel cooking and chilling cabinets.

Interior Corners

4. Interior corners of equipment must be provided with radii (minimum ¼ inch), except where greater radii are required to facilitate drainage and cleaning.

Welded Joints

5. All welding within the product zone must be continuous, smooth, even, and relatively flush with the adjacent surfaces.

Freedom From Cracks, Recesses, Ledges, and the Like

6. All parts of the product zone must be free of recesses, open seams and gaps, crevices, protruding ledges, inside threads, inside shoulders, inside bolts or rivets, and dead ends.

Self-Draining Equipment

7. Where necessary for sanitary maintenance, equipment must be constructed and installed so as to be completely self-draining.

Lubricants

8. Care must be taken to prevent contaminating product by lubricants used in overhead motors, gears, and similar devices. If drip pans are necessary to provide such protection, they shall be easily accessible for inspection and removable for cleaning.

Pumps and Pipelines

9. Pumps and pipelines used in connection with edible product (including edible brine or vinegar solutions) shall be constructed of 18–8 type stainless steel or approved plastic.

Nonproduct Zone

Safety Guards

1. All safety or gear guards must be readily removable for cleaning and inspection.

External Surfaces

2. All external surfaces that do not contact food product shall be free of open seams, gaps, crevices, and inaccessible recesses.

BN-10756X

Figure 7.—Plastic curing container.

EQUIPMENT INSTALLATION

Spacing From Walls and Ceilings

1. All parts of stationary or not readily movable equipment must be installed away from wall and ceiling areas (minimum 1 foot) to provide access for cleaning and inspection.

Spacing Above Floor

2. All permanently mounted equipment must either be installed sufficiently above the floor (minimum 1 foot) to provide access for cleaning and inspection or be completely sealed (watertight) to the floor area.

Wall-Mounted Facilities

3. Wall-mounted cabinets and electrical connections (such as switch boxes, electrical control panels, and BX cables) must either be installed at least 1 inch from equipment or walls or be completely sealed to the equipment or walls.

Control of Waste Water

4. Water-wasting equipment, such as soaking and cooking vats, sausage stuffing tables, can sterilizers, and casing preparation equipment, shall be installed so that waste water from each unit is delivered through an interrupted connection into the drainage system without flowing over the floor. Valves on drainage lines serving such equipment shall be a type easily cleaned and must be mounted flush with the bottom of the equipment. Soaking and cooking vats should be provided with overflow pipes at least 2 inches in diameter. The upper end of each overflow pipe should be equipped with an open-end cleanout tee to facilitate cleaning.

Vent Stacks From Hoods

5. Vent stacks from covered cooking vats or hoods over cook tanks shall be so arranged or constructed as to preclude drainage of condensate back into the vats.

Height of Work Tables

6. Working surfaces of tables and other equipment should be not more than 34 inches above the floor where employees stand on the floor to conduct operations. Tables and equipment having higher working surfaces shall be provided with suitable metal foot platforms for employees to stand on.

Water on Work Tables

7. All tables or other equipment having water on the working surface shall be provided with turned-up edges.

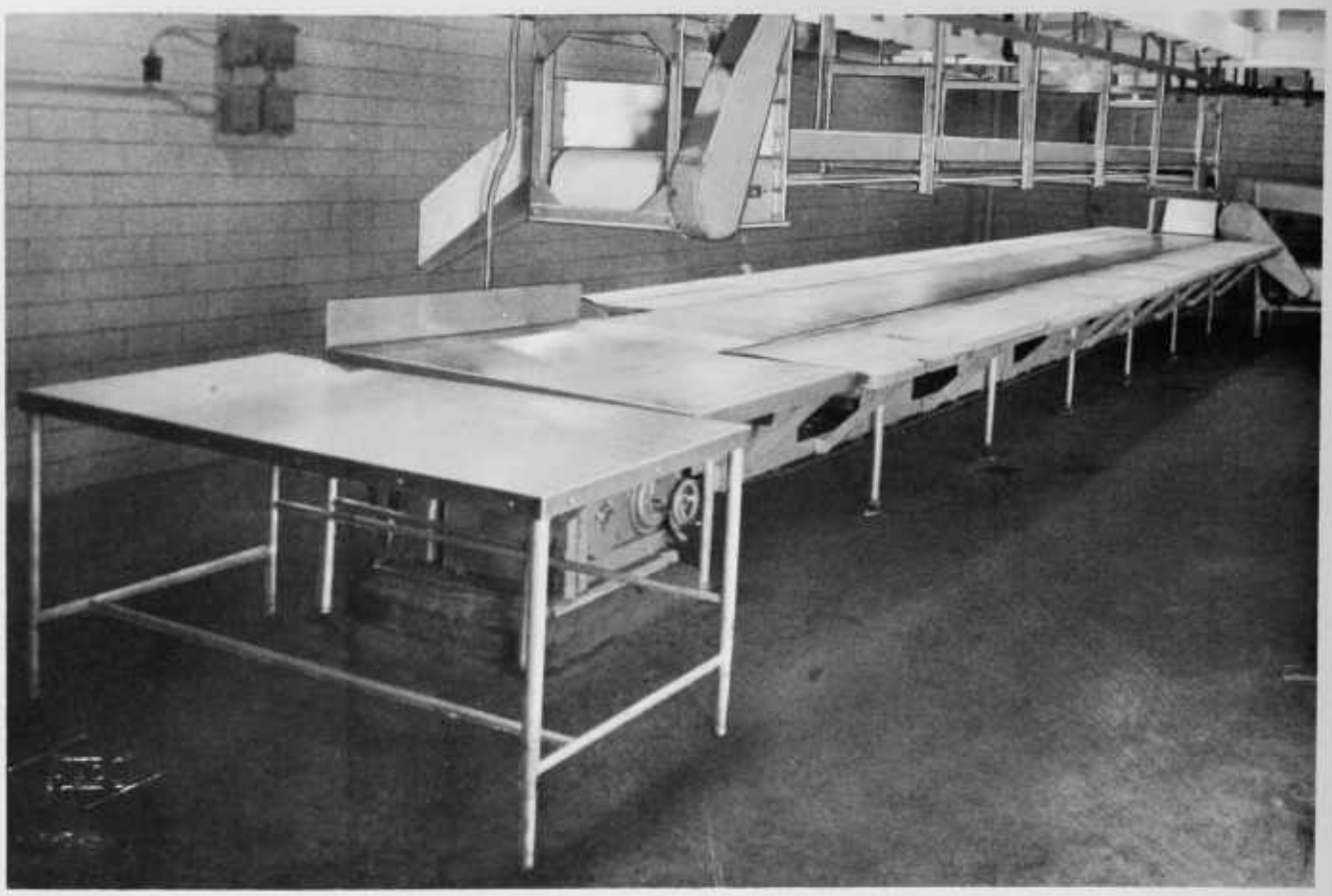

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Figure 8.—Boning department.

The height of the turned-up edge depends on the volume of water used and the operations conducted. In no instance should the turnup be less than 1 inch.

Cutting and Boning Boards and Tables

8. Boards used on boning and cutting tables shall be either a solid (unlaminated) piece of hardwood or (preferably) constructed of approved plastic. Boards shall be in the shortest sections practical and easily removable for cleaning.

Equipment Washroom

9. A separate washroom or area shall be provided in a location convenient to the department involved for cleaning curing vats, handtrucks, utensils, and containers such as boxes and trays. The room or area must have adequate light and ventilation, impervious well-drained floor, impervious walls and ceiling, and an exhaust fan for dispelling steam vapors. In plants using cages or trees for smoking sausage or other product, facilities for washing and rinsing such equipment are required.

HAND-WASHING FACILITIES, STERILIZERS, DRINKING FOUNTAINS, AND CONNECTIONS FOR CLEANUP HOSES

Lavatories

1. Conveniently located hand-washing facilities (lavatories) with a minimum bowl size of 16 by 16 by 9 inches shall be provided for the employees and inspectors. Each lavatory must be supplied with hot and cold running water delivered through a combination mixing faucet with outlet about 12 inches above the rim of the bowl to facilitate washing arms as well as hands; liquid soap and an ample supply of sanitary towels in suitable dispensers; and a suitable receptacle for used towels. Lavatories in workrooms and welfare rooms shall be pedal operated. One lavatory shall be provided for every two sausage stuffing tables and they shall be so located as to be convenient to the stuffer operators. Lavatories shall be directly connected to the drainage system.

BN-10745X

Figure 9.—Hand-washing basin.

Sterilizers

2. Sterilizers shall be constructed of rust-resistant metal, and shall be of sufficient size for complete immersion of knives, cleavers, saws, and other implements in scalding hot water. They should adjoin the lavatories in slaughtering departments and elsewhere as required. Each sterilizing receptacle must be provided with a water line, a steam line or other means of heating, an overflow, and facilities for completely emptying the receptacle.

Drinking Fountains

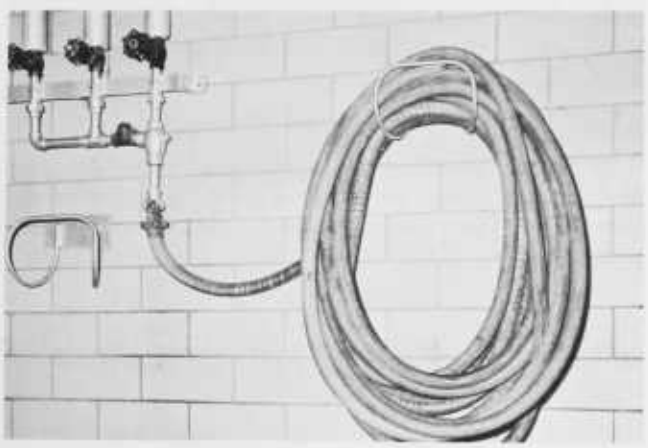
3. Sanitary drinking fountains shall be provided in large workrooms and in dressing rooms. If desired, they may be located at lavatories and so arranged that the overflows discharge into the bowls of the lavatories. If so located, they shall be placed sufficiently high above the bowls to avoid splash onto them when the lavatories are used.

Hose Connections

4. Adequate and conveniently located hose connections for cleanup purposes shall be provided throughout the plant. The use of long hoses should be avoided. Suitable racks or reels for storing the hose when not in use must be provided.

Location of Facilities

5. The location of lavatories, lavatory-sterilizers, drinking fountains, and other similar features must be shown on the drawings.



BN-10751X

Figure 10.—Cleanup hose and storage rack.

FACILITIES FOR PROCESSING EDIBLE PRODUCT

Size of Departments

1. Meat preparation and processing departments shall be of sufficient size to permit the installation of all necessary equipment with ample space for plant operatives and truckways.

Flow of Operations

2. For efficiency, the processing departments should be arranged so that there is a proper flow of product without undue congestion or backtracking, from the time raw materials and supplies are received until the finished product is shipped from the plant.

Perishable Product Departments

3. Facilities for holding perishable product under refrigeration shall be provided. For proper care of product and to facilitate control of molds and bacteria, operations such as beef boning and trimming, bacon slicing, pork cutting, frozen steak preparation, and

sausage chopping and mixing shall be conducted in departments having a temperature not higher than 50° F. Such operations must be located in rooms separate from carcass or product holding coolers to avoid contamination of product by cleanup water or condensation during the cleanup time.

Freezers

4. Product labeled "frozen" is required to be frozen in the establishment where prepared. Suitable freezing facilities shall, therefore, be provided in all establishments contemplating the preparation of 'frozen foods."

Incubation Room for Sterile Canned Product

5. An incubation room for incubating samples of fully processed canned meat product shall be provided in a suitable location in all plants where regular canning operations are conducted. The room must be of adequate size for holding not less than 1 percent of fully processed canned product from each run of each retort for at least 10 days. The temperature in the room shall be maintained by thermostatic control at approximately 98° F., and the room shall be provided with a 7-day recording thermometer mounted on the outside wall of the room. The sensitive elements of the thermostat and recording thermometer must be below the bottom shelf. The shelves shall be made of expanded metal or heavy gage (No. 9) wire mesh and so installed as to be removable for cleaning. The floor in the room shall be pitched to a floor drain equipped with a removable metal screw plug. The door of the room shall be equipped for locking with an MID padlock.

Identification of Canned Product

6. In plants that conduct canning operations, tags that change color on heating must be provided for attachment to retort baskets containing canned product being placed in retorts for processing. Such tags shall be designed to positively identify cooked and uncooked product.

Dry Storage Space for Supplies

7. Suitable and adequate space for holding supplies such as boxes, paper, and cans shall be provided in a convenient location in each plant. In establishments that slice bacon, slice and prepackage luncheon meat, prepare sandwich steaks, and the like, and use a large volume of packaging and labeling material, adequate dry storage space shall be provided for holding such supplies in a location or locations convenient to the department where used, preferably immediately adjacent. Provisions must be made to store supplies on racks about 12 inches above the floor.

Truckways Within the Plant

8. Truckways shall be unobstructed passageways having a minimum width of 5 feet with no overhead storage rails. When truckways are in coolers having overhead rails, along a wall or adjacent boning tables, a horizontal distance of 7 feet must be provided between the wall or table and the vertical of the nearest rail. Truckways shall be clearly designated on the drawings.

Vehicular Areas for Trucks and Railroad Track Gutters

9. Concrete-paved areas, properly drained and extending out at least 20 feet from buildings, loading docks, or livestock chutes and platforms, must be provided at places where vehicles are loaded or unloaded. Railroad track gutters with suitable drainage shall be provided where refrigerated railroad and livestock cars are loaded and unloaded. The top of the gutter must be below the bottom of the railroad ties unless the entire track area is paved. This feature should be clearly illustrated on the drawings by a typical cross section of the gutter and adjacent railroad ties and rails.

DESIGN, EQUIPMENT, AND OPERATION OF SLAUGHTERING DEPARTMENTS AND RELATED AREAS

Livestock Pens

1. To avoid delays in slaughtering operations, pen capacity for holding the maximum number of animals of the various kinds that will be slaughtered in a single day shall be provided for ante mortem inspection. The pens, ramps, unloading chutes, and runways must be paved with concrete or brick and, except at gateways, have side curbs of similar impervious material 12 inches or more in height and suitable drainage facilities. Water troughs shall be provided with suitable overflows located over or adjacent to pen floor drains.

Ante-Mortem Inspection Facilities

2. To facilitate the ante-mortem inspection of animals, ample natural or artificial lighting and a suitable suspect pen, with a squeeze pen where the temperature of the animals may be taken, shall be provided. So that ante-mortem inspection may be carried on properly in inclement weather, a reasonable proportion of the livestock pens, including the area where the suspect pen and squeeze pen are located, must be under a weathertight roof.

Location of Holding and Shackling Pens

3. To avoid dust and odors, holding and shackling pens shall be located outside of or effectively separated from the slaughtering department by full-height partitions of impervious material.

Figure 11.—Paved vehicular area.

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Figure 12.—Livestock pens.

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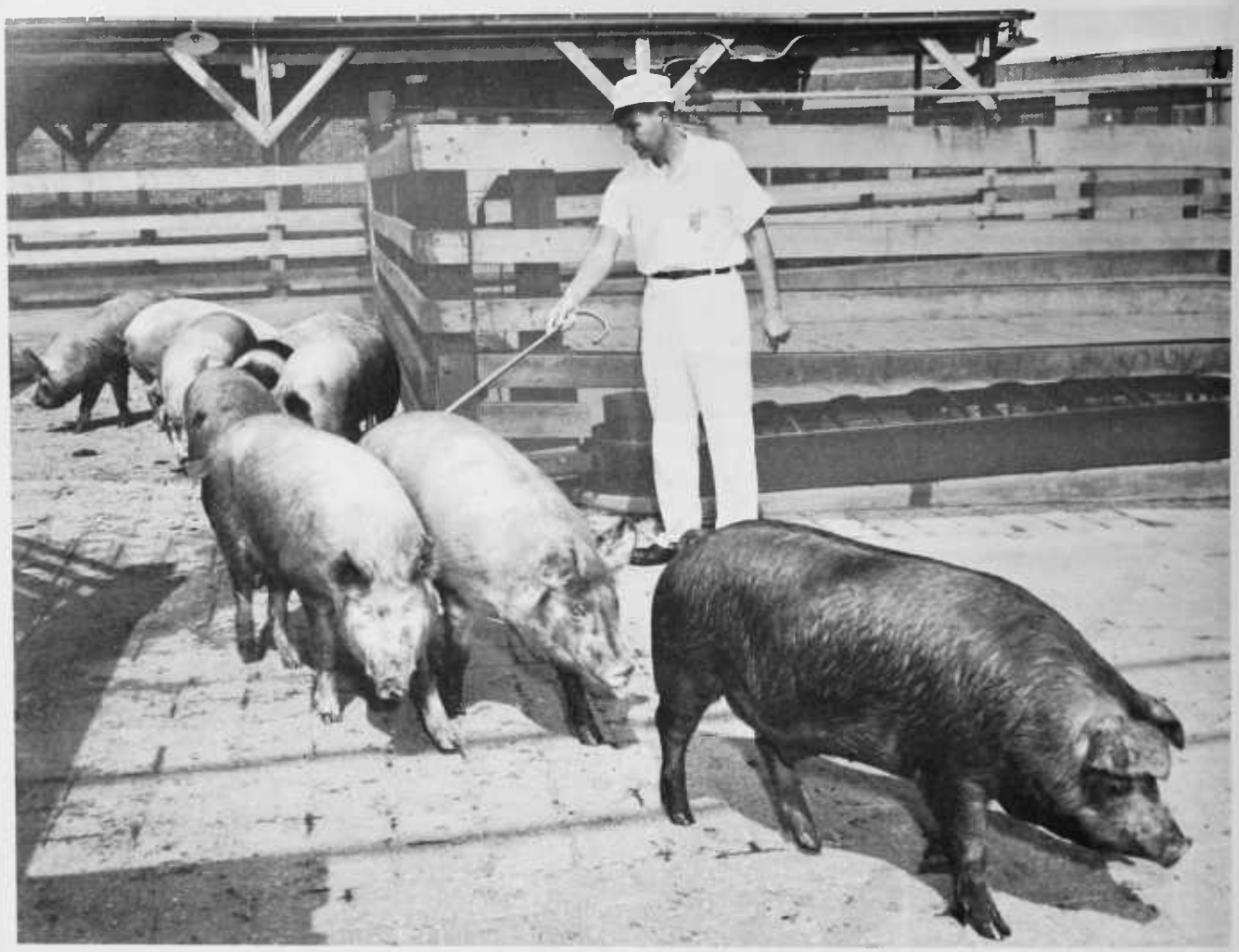

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Figure 13.—Ante-mortem inspection.

Facilities for Crippled Animals

4. Suitable facilities must be furnished for conveying crippled animals into the slaughtering department.

Power-Driven Bleeding Hoists

5. Power-driven hoists shall be provided for elevating cattle, calves, hogs, sheep, goats, and horses to a bleeding rail.

Slaughtering Departments

1. Slaughtering departments must have adequate floor space and be arranged to facilitate the sanitary conduct of operations and the efficient performance of the inspection. Truckways over which products are conveyed from the slaughtering department to rooms such as the offal cooler, the edible products tank charging room, and the inedible products tank charging level shall be located so that the material is not trucked beneath rails from which dressed carcasses and product are suspended.

Maximum Rate of Slaughter Permitted

2. The rate of slaughter is dependent on the ability of the establishment to present carcasses, their viscera, and parts in an orderly and clean manner which permits a complete and efficient inspection at all times and does not create congestion or other objectionable conditions of any kind. The drawings or specifications shall incorporate the above and should also indicate if more than one species of animal will be slaughtered simultaneously and if the kosher method of slaughtering will be used.

Facilities for Handling Viscera

3. Adequate space and suitable and properly located facilities must be provided for separating and handling the viscera of the various species of animals slaughtered. The cattle paunch-emptying table shall be equipped with a power-operated lift; if paunches are saved for edible purposes, the top of the table must extend over the emptying hopper about 12 inches,

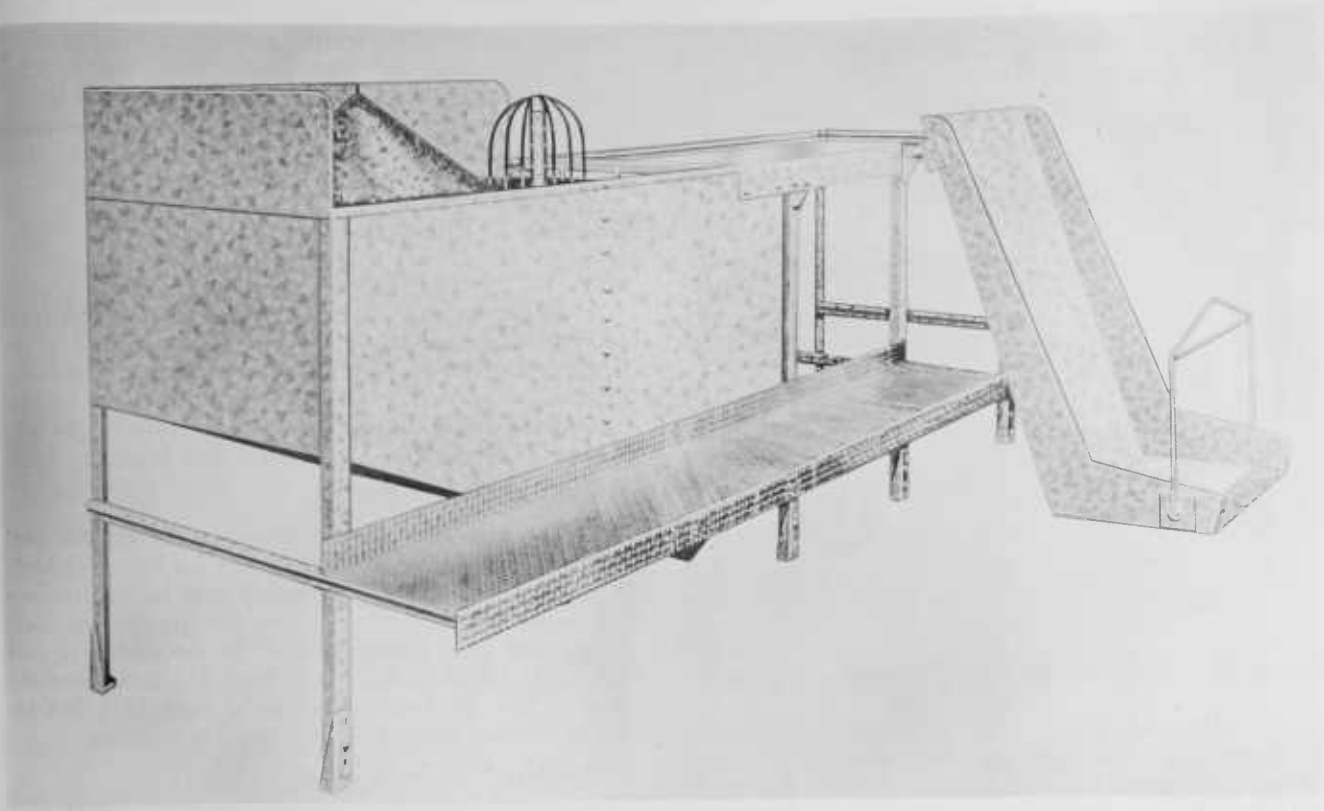

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Figure 14.—Compact facilities for cleaning cattle paunches.

and the sides of the hopper should extend down vertically below the top of the table at least 3½ feet, to avoid soiling the paunches. (See drawings on p. 72.)

Edible Byproduct Cooler

4. Suitable facilities for holding edible organs and parts (offal) under refrigeration in a separate cooler or in a separately drained part of a carcass cooler are required. Such areas must be accessible from the slaughtering department without passing through a line of carcasses or through a congested carcass cooler.

Facilities for Handling Inedible and Condemned Materials

5. Well-arranged and adequate facilities for handling inedible and condemned material shall be provided at slaughtering plants. Inedible products departments must be separate and distinct from those used for edible products, except that one connecting doorway provided with a solid, self-closing door completely filling the opening is allowed between the tank charging room of the inedible products rendering department and the slaughtering or viscera separating departments. Inedible products tankhouses should be arranged so that material is mechanically elevated to an upper level and gravitated to rendering units on a lower level. At least two rendering units should be provided so that condemned and inedible material

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Figure 15.—Edible byproduct storage rack.

N-10743XB

Figure 16.—Pan truck for edible byproduct storage.

can be disposed of promptly in case one of the units breaks down. If rendering facilities are not provided, condemned material is required to be denatured and held in watertight metal containers in a suitable inedible products room pending daily removal to a rendering plant. Permission to convey such material over public streets and highways must be obtained from the State and local authorities having jurisdiction in such matters.

Facilities for Handling Animal or Fish Food

6. Slaughtering establishments which make inedible animal or fish food from certain byproducts shall provide adequate facilities for preparing, denaturing or decharacterizing, chilling, and packing the material separate and apart from facilities used in the preparation of edible products. The material shall be denatured or decharacterized promptly as a part of the dressing or viscera-separating operations so as to avoid extra supervision by inspectors. After the inedible material has been packed in properly marked liquid-tight containers, it may be stored in the edible products freezer provided it is held separately and does not interfere with handling of edible products.

Carcass Chilling Coolers

Rail Arrangement

1. Cooler rails shall be placed at least 2 feet from refrigerating equipment, walls, columns, and other fixed parts of the building. To promote cleanliness of product and to protect walls from damage by carcass shanks, it is desirable to place rails (especially header or traffic rails) at least 3 feet from the walls.

Height of Cooler Rails

2. The tops of cooler rails above the highest part of the floor shall be at least 11 feet for halves of beef; 9 feet for headless hog carcasses and calves (trolleys 12 inches long); and 7½ feet for quarters of beef. Sheep and goat carcasses shall be suspended so that the hooks or gambrels are at least 6½ feet above the floor. The rail height shall be at least 12½ feet for horse carcass sides and 8½ feet for quarters.

Retaining Compartments

3. A suitable compartment shall be provided in a cooler for holding retained carcasses or parts and retained products. The compartment may be separated from the remainder of the cooler by partitions of rust-resistant wire screen (No. 9 gage, 1-inch mesh), or flat expanded metal of approximate gage and mesh, extending from about 2 inches above the floor to the ceiling. The compartment shall have a door of similar material at least 4 feet wide, equipped for sealing or locking with an MID padlock. If it is desired to hold cattle carcasses retained on account of infestation with cysticercus bovis, a similar compartment shall be provided for holding such carcasses in a freezer at a temperature not higher than 15° F. for at least 10 days.

REQUIRED SLAUGHTERING FACILITIES

CATTLE

Cattle Dressing Layouts

1. Cattle dressing layouts are of three principal general types: (*a*) Double-rail hang-off, (*b*) single-rail hang-off and (*c*) "on-the-rail" dressing.

2. The trend in the industry for several years has been away from the double-rail system. Until rather recently, the single-rail system was preferred for reasons of efficiency. However, most modern cattle slaughtering departments now utilize "on-the-rail" facilities. The Meat Inspection Division favors this system, as significant improvements in efficiency of operations, inspection, and sanitary maintenance are possible, as compared with older methods.

3. Drawings of slaughtering and allied departments using single-rail hang-off and various "on-the-rail" facilities are included in this handbook (p. 59–67). A summary of principal minimum rail heights and floor space, some of which appear on the drawings, is also included and should be carefully followed in preparing layouts.

Requirements Applicable to All Types of Cattle Slaughtering Layouts

Stunning or Kosher Shackling Pens

1. Efficient facilities must be provided for confining

N-10766X

Figure 17.—Cattle carcass cooler.

animals for stunning before bleeding or, if kosher operations are conducted, for confining animals for easy shackling.

Dry Landing Area

2. A dry landing area at least 7 feet wide should be provided in front of the stunning pen to receive stunned animals ejected from the pen. The area should be separately drained and sufficiently removed from the bleeding area. The dry landing area must be enclosed by a fence about 4 feet high to prevent escape of improperly stunned animals. The fence shall have an opening about 16 inches wide centered beneath the overhead rail for passage of suspended carcasses and a properly located opening of same size for employee entrance and exit. The fence shall be constructed of rust-resisting metal pipes and may be installed either as upright pipes 16 inches on center without crossrails, or, if desired, crossrails may be used and the number of upright pipes reduced to the number necessary for proper support. (See drawing, p. 45.)

Bleeding Area

3. A curbed-in bleeding area of adequate size must be provided. It should be so located that blood will not be splashed on stunned animals lying on the dry area or on carcasses being skinned on the siding beds.

Bleeding and Dressing Rails

4. A bleeding rail with its top at least 16 feet above the floor or the metal grating over the bleeding area and dressing rails at least 11 feet above the floor are required. When moving-top viscera inspection tables are used, dressing rails must be at least 12 feet 3 inches high.

Facilities for Handling Heads

5. Suitable facilities and adequate floor space should be provided for dehorning, flushing, washing, and inspecting heads; for storing heads on racks or trucks after removal from carcasses; and for head workup. If conveyors are used for cattle head inspection, the heads must be spaced 2 feet on centers, and a distance of 4½ feet must be provided between the bottom of the head hooks and the inspectors' foot platform. (The details of construction of this equipment should be shown on the drawings.)

Floor Drainage

6. Efficient drainage facilities must be provided for the entire slaughtering department. See suggested layouts on pages 53–57, 59–64, and 67 for acceptable drainage arrangements.

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Figure 18.—Hog carcass cooler.

Figure 19.—Skinning cattle "on-the-rail."

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BN-10765X

Figure 20.—Skinning cattle "on-the-rail."

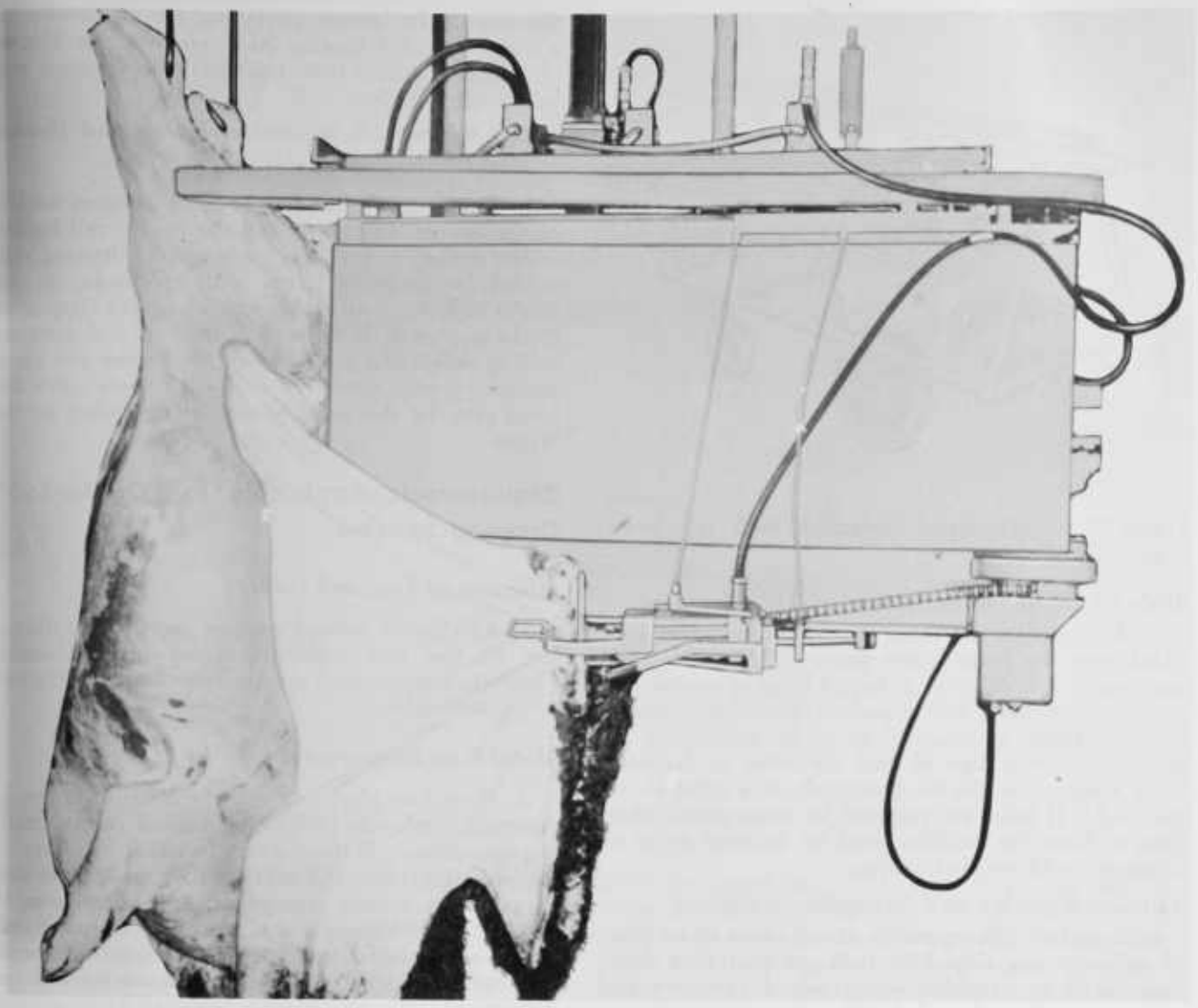

Figure 21.—Mechanical hide-pulling device.

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BN-10735X

Figure 22.—Cattle head inspection truck (for small plants).

Hide Chute or Other System of Hide Removal

7. A properly constructed hide chute should be provided near the point where hides are removed from carcasses. The chute shall have a hood of substantial rust-resisting metal with a push-in door closely fitting a metal frame inclined so as to be self-closing by gravity. A vent pipe at least 10 inches in diameter must extend from the hood vertically to a point above the roof. If hides are removed by some means other than a chute, the facilities must be designed so as to create no problems of sanitation.

Carcass Washing and Shrouding Facilities

8. A curbed and separately drained area or an area of sufficient size sloped ½ inch per foot to a floor drain shall be provided where passed carcasses are either washed or shrouded. Nonslip metal platforms shall be provided for employees performing these operations.

Header Rail—Clearance

9. At least 3 feet shall be provided between the header rail and the adjacent wall for the clearance of dressed carcasses transferred on the rail.

Requirements Applicable to Double-Rail and Single-Rail Hang-Off Dressing Systems

Space Between Bleeding Area and Dressing Beds

1. The pritch plates or cradles must be located at least 5 feet from the curb around the bleeding area.

Space Between Drop-Off to Dressing Beds and Evisceration Hoists

2. A distance of 16 feet shall exist between the vertical of the drop-offs to the pritch plate area and the vertical of the line of the hoists where carcasses are eviscerated for layouts of two beds, and 18 feet or more for three or more beds. This is needed to provide space for the evisceration of carcasses and trucking of product, and for the inspections made at this point. In layouts providing for evisceration at a single point following hide removal (in lieu of evisceration at each hoist position), the distances may be from 10 to 12 feet.

Space Between Evisceration Hoists and Header Rail Leading to Cooler

3. There must be 14 feet or more between the line of the evisceration hoists and the header rail leading to the cooler, to provide the length of dressing rails needed for dropping hides, splitting chucks, etc., on double-rail hang-off and where viscera inspection trucks are used. If hides are dropped and carcasses split at designated areas beyond the header rail (as is customary with single-rail hang-off layouts), this distance may be shortened somewhat depending on the layout.

Requirements Applicable to "On-the-Rail" Dressing Systems

Disposal of Feet and Udders

1. An efficient method must be provided for disposing of feet and udders removed from carcasses. Chutes to a lower level are highly desirable if structurally practicable.

Metal Foot Platforms

2. Metal foot platforms must be installed for establishment employees performing various carcass dressing operations. Platforms may be either stationary or the elevating type. If elevating, they must be located so as not to contact skinned portions of carcasses. If stationary platforms are used, they must be spaced well away from line of dressing rail and be constructed with the legs set in sufficiently to prevent contact with the forelegs of cattle, or they may be suspended from overhead structures if preferred.

Spacing of Carcasses on Dressing Rails When Powered Conveyors or Gravity Flow Rails are Used

3. To prevent contact between carcasses and to provide adequate space for operation, cattle carcasses shall be separated by fingers at least 5 feet on center on conveyor-type dressing rails or by rail "stops" 5 feet on center on gravity-flow dressing rails except that such spacing must be at least 8 feet on center alongside the viscera inspection table (if used).

Cattle Viscera Inspection Facilities

Viscera Trucks for Small Layouts

1. In small layouts with a limited rate of slaughter, viscera is usually placed in a specially designed handtruck for inspection. Such trucks must be constructed of stainless steel. An inspection pan at least 24½ by 26 by 3 inches in size is required for inspecting hearts, lungs, livers, and spleens. This pan must be placed with

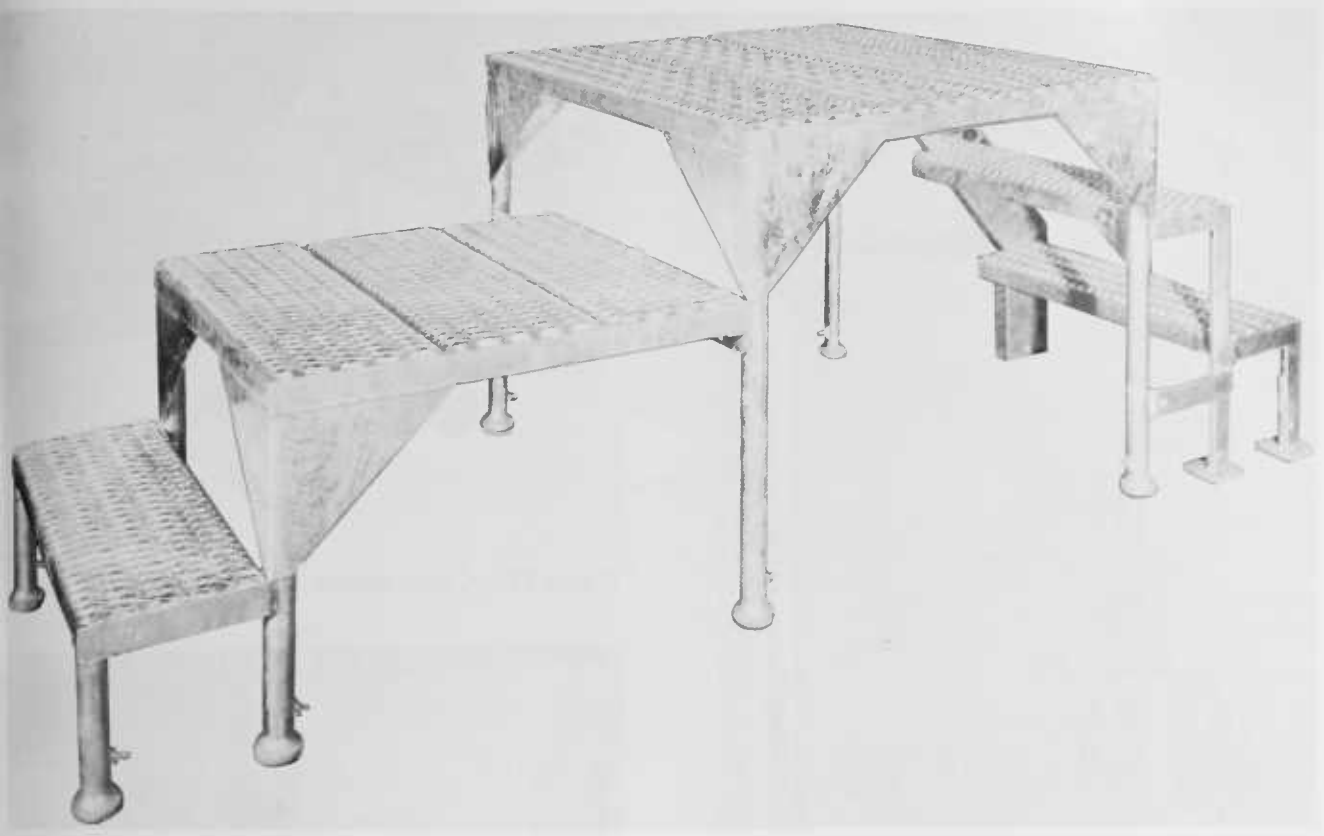

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Figure 23.—Stationary-type metal foot platform.

its bottom 34 inches above the floor. A compartment properly designed to facilitate evisceration and large enough to contain paunches and intestines is required beneath the inspection pan. The bottom of the lower compartment must be about 14 inches above the floor. (See fig. 25.)

Viscera Truck Cleaning and Sterilizing Facilities

2. When viscera inspection trucks are used, a separately drained area about 7 by 8 feet in size is required for cleaning and sterilizing such equipment. The facilities shall be located at or near the point where condemned material is discharged from the trucks. When placed where splash might contaminate edible product, the truck washing area shall have walls 8 feet or more in height. The floor in the area shall be pitched about ½ inch per foot to a drain in a rear corner. A hose for washing trucks with an ample volume of water at a temperature of at least 180° F. is required in the washing area. The hot water must be obtained from a central supply (rather than by mixing steam and water at or near the hose connection) and a dial-type thermometer with its temperature sensitive element located in the hot water line near the hose connection is required.

Flight-Top Inspection Tables for Medium Size or Large Layouts

1. **Construction.**—In layouts handling 30 or more cattle hourly, viscera is usually placed on a flight-top table for inspection. (Moving tables are required where the rate of slaughter is 40 or more hourly.) Such tables must be constructed with stainless steel flights about 5 feet wide. The table must be of sufficient length for efficient evisceration, inspection, and viscera takeoff. A suitable compartment-type flight washer and sterilizer is required at the proximal end of the table and the compartment must be provided with a vent pipe to the outside air. This duct must be constructed of rust-resisting metal and be at least 10 inches in diameter.

2. **Washing and Sterilization.**—A thermometer with its sensitive element in the hot water line as it enters the sterilizing compartment is required. The temperature recording scale of the thermometer must be located so that it can be readily observed by the inspector working alongside the inspection table. Cold water sprays to remove blood, animal tissues, and fluids from the flights before sterilization are required for the returning flights at the distal end of the table, and additional cold water sprays are necessary to cool the flights immediately following sterilization.

3. **Synchronization With Carcass Conveyor.**—The movement of the inspection table must be carefully synchronized with the movement of the carcass conveyor. To accomplish this, the table and the carcass conveyor must be motivated by the same drive with the table propelled by a shaft and worm mechanism.

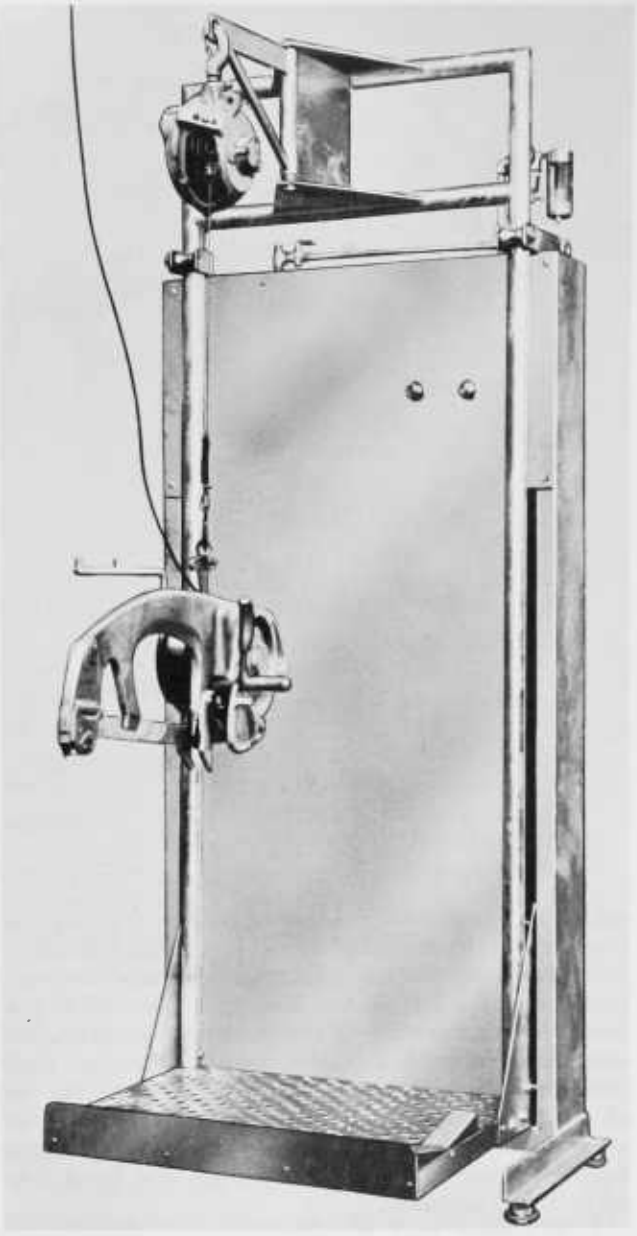

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Figure 24.—Elevating-type foot platform.

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Figure 25.—Cattle viscera inspection truck.

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Figure 26.—Evisceration of cattle with aid of rail "dropper."

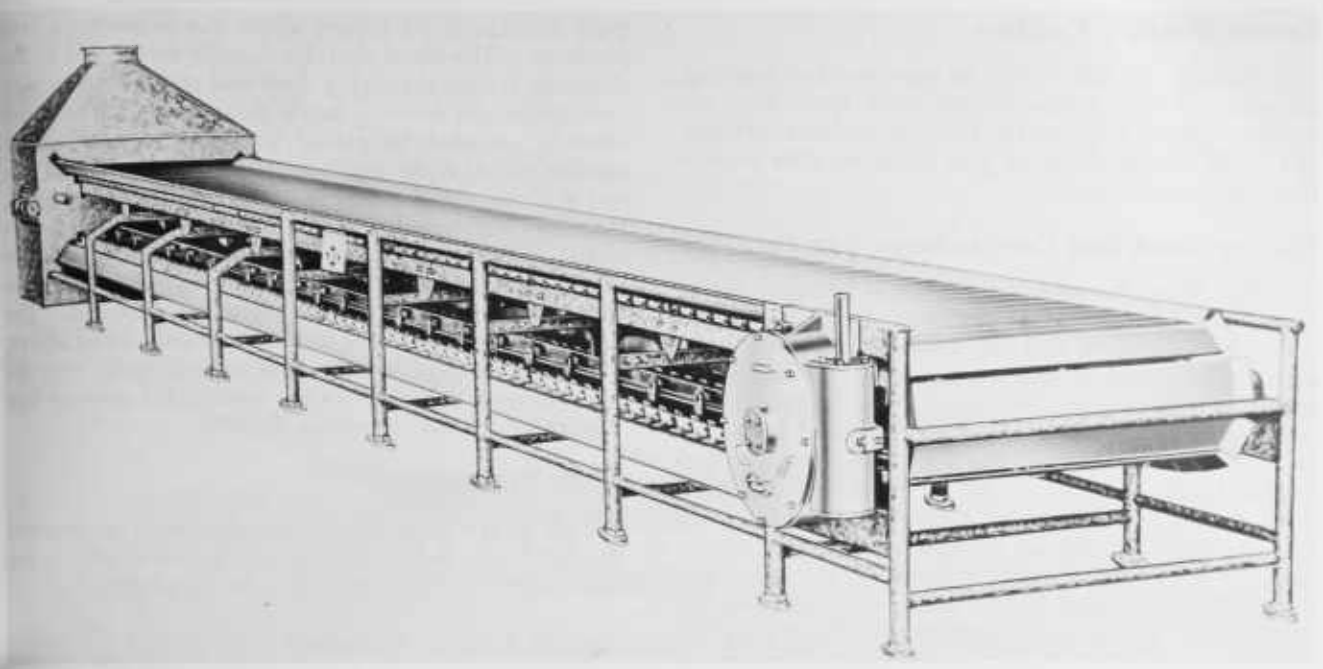

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Figure 27.—Flight-top cattle viscera inspection table.

4. **Control for Movement of Table.**—A stop button for controlling the movement of the carcass conveyor and the viscera inspection table must be provided in a location convenient to the inspector.

5. **Location of Table.**—The viscera inspection table must be located over a separately drained floor area. A floor drain is required beneath the sterilizing chamber. (Drawings on page 63, 64, and 67 illustrate the installation of flight-top cattle inspection table.)

6. **Eviscerators' Facilities.**—A foot platform, hand-washing facilities, a hand tool sterilizer, a boot washing cabinet, and a boot storage locker are required for the eviscerator alongside the proximal end of the table. (See drawing of these facilities on page 44.)

SHEEP, GOATS, AND CALVES

Bleeding Rail

1. A bleeding rail with its top at least 11 feet above the floor must be provided for handling sheep, goats, or calves. If only sheep are handled in the bleeding section, the height of the bleeding rail may be less (about 9 feet).

Dressing Rails

2. Dressing rails shall be provided of such height that gambrels or leg hooks from which carcasses are suspended are about 7½ feet above the floor or the inspector's platform. If calves are slaughtered by the kosher method, space is required for removing the heads before carcasses that are dressed with the skins on are washed and for placing the removed heads after they are flushed and washed on a head truck for conveyance to the place of viscera inspection. An unobstructed route for conveying the heads to the point of inspection must be provided.

Dressing Space and Operations

3. Adequate space must be provided along the rail for skinning legs and for skinning and removing calf heads before carcasses are transferred from shackles to gambrels. (The transfer point and the places where the principal dressing operations are performed should be indicated on the drawings.) When calves are dressed over a layout using a moving carcass conveyor, combination viscera and head inspection table, and are suspended sufficiently high to prevent contamination of the head by contact with the floor or splash therefrom, the head skinning, removal, flushing, and washing must be deferred until the carcass reaches a point adjacent to the charging end of the inspection table, excepting heads from koshered calves which must be handled as described in item 2 above.

Calf Washing Facilities

4. If calf carcasses are dressed with the skins on, proper facilities shall be provided for washing the skins before incisions are made, except the sticking wounds.

Calf Head Handling Facilities

5. Suitable facilities shall be provided for flushing, washing, inspecting, and storing calf heads.

Carcass Washing Facilities

6. Suitable facilities shall be provided for washing unopened sheep carcasses after pelts have been removed, and for washing the internal surfaces, breasts, and necks of calf, sheep, or goat carcasses after inspection has been completed.

Viscera, Head, and Carcass Inspection Facilities

7. (a) When the rate of slaughter is less than about 20 calves, sheep, or goats per hour, facilities for the inspection of viscera and calf heads consist of a hoppered metal stand of the proper size to accommodate one inspection unit of two pans. The large pan for the inspection of abdominal viscera should be 24 by 36 by 3 inches; the small pan for thoracic viscera (or heads, if calf heads are placed on the table for inspection) should be 12 by 36 by 3 inches. The pans shall be so located that they do not interfere with the movement of the inspector and eviscerator alongside the stand. The pans shall have handles or hand-holes for convenient removal and a perforated bottom with the holes about ¼ inch in diameter, spaced 3 inches on centers. If calves are dressed on the layout, the smaller pan must be provided with a suitable device for holding the head immobile in an upright position for inspection (see drawing on p. 53). If only sheep or goats are dressed on the layout, the pans may be 24 by 24 by 3 inches and 12 by 24 by 3 inches in size.

A conveniently located receptacle (sterilizer) shall be provided for sterilizing the inspection pans. The height of the stand shall be such that the bottoms of the pans are about 34 inches above the inspector's foot platform. The stand shall be directly connected to the drainage system through a deep seal trap or waste pipe that discharges directly into a floor drain. The stand when in use shall be placed with its end holding the smaller pan at right angles to the dressing rail and this end shall be about 2 feet from the vertical of the rail, measured horizontally.

(b) When more than about 20 sheep, goats, or calves are slaughtered hourly, a moving pan type inspection table and a carcass conveyor are required. The pan sizes must conform to the standards listed above, and the table must be otherwise in conformity with the requirements described in the section for moving hog viscera and head inspection facilities.

Floor Drainage

8. A drip valley about 24 inches wide is required beneath the dressing rail from the bleeding area to the point where viscera inspection is completed.

Size of Calves Handled

9. If calves are of such size that there is not a clearance of about 12 inches above the drip valley when they are suspended from the dressing rail or whose viscera is of such size that the eviscerator cannot readily transfer it manually and unaided from the carcasses to the inspection stand, they are not to be dressed on a dressing rail but are to be skinned and eviscerated as cattle on the cattle dressing beds. (Notation covering this should be placed on the drawings.)

HOGS

Location of Certain Operations

1. The equipment and operations listed below must be located in an area or areas separated from the carcass dressing room, except for the necessary openings for the passage of carcasses and for access; hoisting, sticking, and bleeding; scalding vat; dehairing machine located within a curbed area having nonclogging drainage inlet; gambrelling table; facilities for dipping carcasses in a rosin mixture as a depilatory aid (if installed); and singeing operations.

Scalding Tub

2. A scalding vat constructed of metal shall be provided. The following minimum lengths are recommended for the rates of slaughter indicated: 75 per hour, 20 feet; 150 per hour, 40 feet; 300 per hour, 60 feet; and 600 per hour, 90 feet. A somewhat smaller vat may be used when the rate of slaughter is not greater than 20 per hour.

Space for Operations and Truckways

3. Adequate space and facilities shall be provided for the proper conduct of operations and the efficient performance of the inspection with facilities arranged so that it is not necessary to truck or otherwise convey product through a line of carcasses suspended from the dressing rails.

Floor Drainage

4. A drip valley about 24 inches wide and integral with the floor shall be provided. It must be pitched to drainage inlets properly located in the valley. The drip valley shall extend from the point where carcasses leave the gambrelling table to the point where carcass inspection is completed. The floor may be sloped to drain to the drip valleys.

Shaving and Carcass Washing Facilities

5. Shaving rail of adequate length and a carcass washer of the cabinet type having separate drainage facilities are essential. The carcass washer shall be located at a point beyond completion of shaving operations and before the head dropper's station. No shaving is permitted after heads are dropped.

Inspection Facilities for Not More Than 20 Per Hour

6. When the rate of slaughter is not more than 20 per hour, the inspection facilities may be in the form illustrated on page 53.

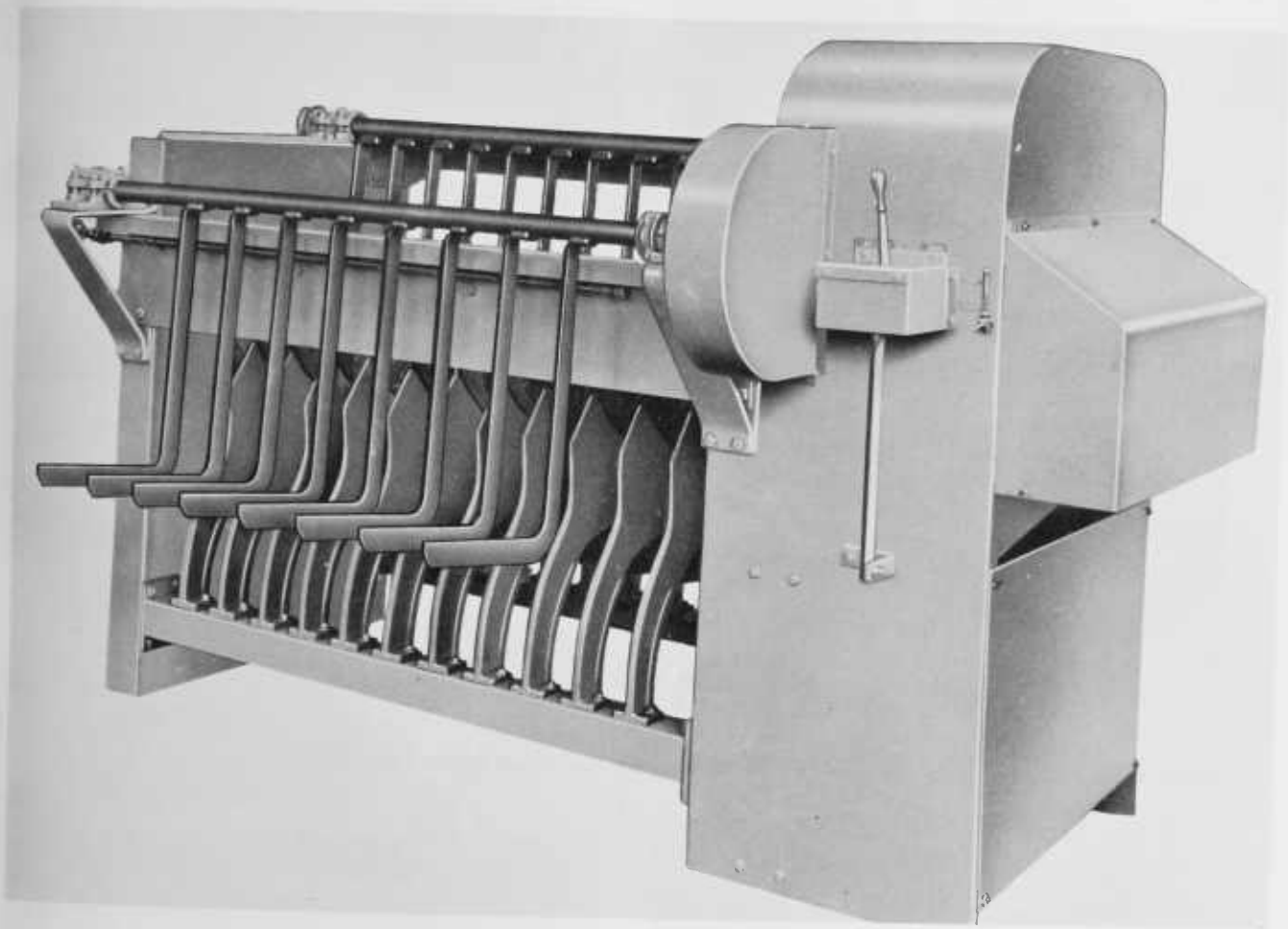

Figure 28. Mechanical dehairer for hogs.

BN-10761X

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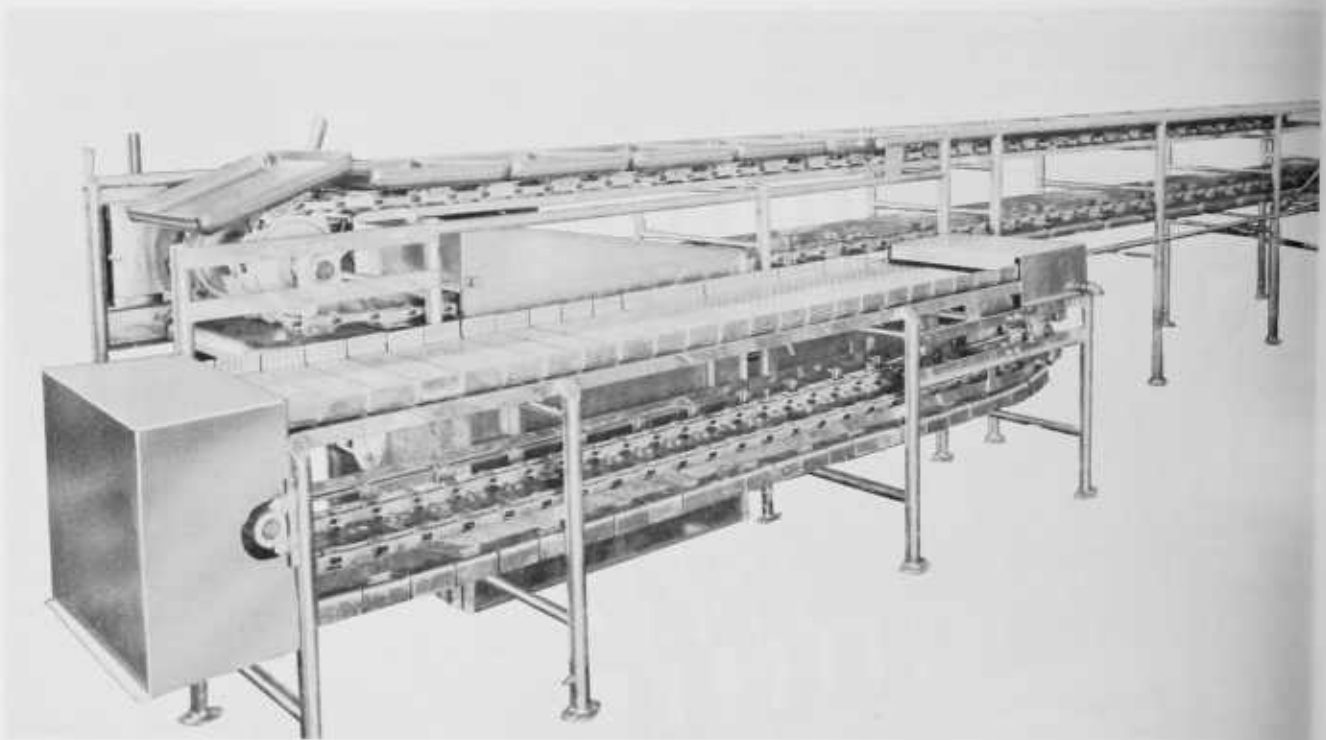
Inspection Facilities for More Than 20 Per Hour

7. (*a*) When the slaughter rate is faster than 20 hogs per hour, a moving carcass conveyor and a moving pan inspection-type table are required. See drawings on subsequent pages for pan sizes and table layouts. (*b*) Moving viscera and head inspection tables for hogs must conform to the following additional specifications:

The pans of the moving top viscera inspection table must be constructed of stainless steel. The guard rail must be omitted from the section of the viscera inspection table opposite the eviscerator's station. A suitable pan sterilizer is required at the proximal end of the table. The sterilizer must be without bottom and the sides extend upward from about 2 inches above the floor. In all other details, hog viscera inspection conveyors must conform to specifications already listed under cattle.

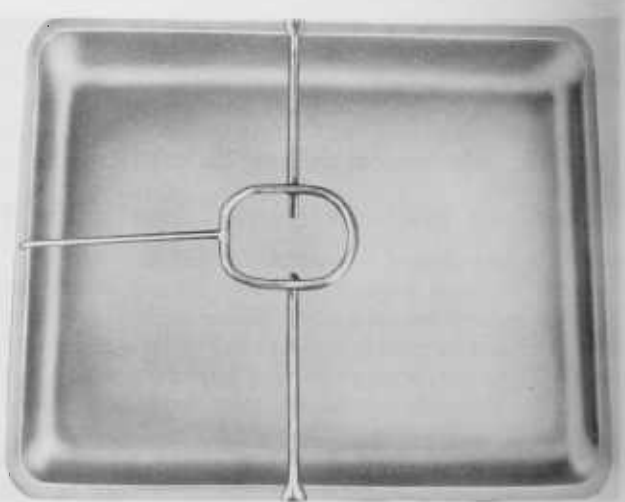


BN-10744X

Figure 29.—Hog viscera inspection table with moving foot platform for eviscerator.

BN-10760X

Figure 30.—Inspection pan with device for holding hog and calf heads.



BN-107623

Figure 31.—Pan from standard hog viscera inspection table showing removable head-holding device.

BN-10764X

Figure 32.—Inspecting hog heads.

BN-10752X

Figure 33.—Inspecting hog viscera.

1. The construction requirements and facilities for horse slaughtering departments are essentially identical with those for cattle. Exceptions include rail heights, clearances, etc. (See chart on page 39 for various dimensions.)

BN-10734X

Figure 34.—Inspecting hog carcass.

1. Under provisions of the Humane Slaughter Law enacted August 27, 1958, and effective July 1, 1960, meat packers whose products may be offered for sale to the Federal Government must use humane slaughter methods. The Secretary of Agriculture has designated and published a description of those methods of slaughter and handling of livestock prior to slaughter considered to comply with the Humane Slaughter Law. Persons desiring a copy of the "Designation of Methods" can obtain such information from the Chief Staff Officer for Humane Slaughter, Meat Inspection Division, ARS, U.S. Department of Agriculture, Washington 25, D.C. Drawings for slaughtering departments submitted for Meat Inspection Division approval should clearly show the proposed humane slaughter facilities if product is to be offered for sale to the Federal Government. Suggested layouts for humanely handling animals are included in this handbook.

WELFARE FACILITIES FOR PLANT EMPLOYEES

Dressing Rooms and Equipment

1. Well located dressing rooms, properly separated from toilet rooms (see paragraph number 4 below), are required for employees of each sex (unless only one sex is employed at the plant). The number of employees using each dressing room should be shown in the drawings or specifications. If multiple shifts of employees working in the plant use the facilities, this should also be indicated in the plans.

Lockers

2. Each employee shall be provided with a metal locker at least 15 by 18 by 60 inches. To permit ready cleaning beneath the lockers, they must be placed above the floor on legs or other supports about 16 inches high. The lockers shall have sloping tops. To facilitate orderliness and cleaning of the dressing room, employee seats should be in the form of plastic or wood planks about 12 inches wide, mounted in front of and below the doors of the lockers on an extension of the framework supporting the lockers. If seats not attached to the lockers are preferred, they must be in the form of plastic or wooden planks securely fastened by means of a minimum number of pipe leg supports to the floor in the aisle between the lockers. The aisle width between rows of lockers shall be about 7 feet minimum when attached seats are used (5 feet between rows of seats) and about 6 feet minimum with centrally located seats.

Shower-Bath Facilities

3. Suitable shower-bath facilities shall be provided in locker rooms (not in toilet rooms) at establishments where slaughtering operations are conducted. Such facilities are also desirable in processing plants. The shower-bath stall must have an 8-inch high curb of impervious material unless it is entered through an individual dressing room that has the floor sloped to drain into the shower.

Toilet Rooms and Facilities

4. Toilet rooms must be separated from adjoining dressing rooms by tight, full-height walls or partitions. Toilet rooms may not be entered directly from a workroom, but entrance through an intervening dressing room or ventilated toilet room vestibule is permissible. Toilet rooms and toilet room vestibules shall have solid, self-closing doors completely filling the openings, except as described in paragraph 7.

BN-10748X

Figure 35.—Standard clothing lockers.

5. Elongated water closets with open split seats shall be provided in sufficient number for the employees using them (at least one unit for 25 men or 20 women). It is desirable to provide urinals in toilet rooms for men. If stall-type urinals are used, a step-up of concrete or other impervious material surfaced with ceramic or glazed tile, sloped to drain into the urinals must be provided. If wall-hung type urinals are used,

floor drains shall be provided immediately beneath such fixtures.

Hand-Washing Facilities in Welfare Rooms

6. A sufficient number of modern-type hand-washing basins (lavatories) are required in welfare rooms. In small plants with a limited number of employees, lavatories in welfare areas may be confined to toilet rooms. However, large dressing rooms should have hand-washing facilities in addition to those located in the toilet rooms.

Ventilation of Welfare Rooms

7. Inside toilet and dressing rooms without means for admitting natural light and ventilation and not air-conditioned, must be effectively ventilated mechanically. Such inside toilet rooms shall be provided with an exhaust fan (activated by a common switch with the artificial lighting in the area) and a duct leading to the outside air. Doors to dressing and toilet rooms ventilated in this fashion shall have a louvered section about 12 by 12 inches minimum in the lower panel.

Lunch Facilities

8. To preclude insanitary conditions usually associated with employees eating lunches in edible processing departments, adequate lunch facilities consisting of tables and chairs (or benches), a lavatory, and drinking fountain must be provided when plant cafeterias or nearby eating places are not available. If dressing rooms have sufficient space without congestion, no objection will be made to providing the lunch facilties in such areas. Otherwise, a separate room or area is required.

Welfare Facilities for Employees in Inedible Departments

9. It is highly desirable to have separate welfare facilities for employees of the hide cellar, inedible products department, and the like.

Figure 36.—Plant lunch room. BN-10750X

MID INSPECTOR'S OFFICE

1. A well-located inspector's office at least 7 by 9 feet in size is required at each official establishment. The office shall be located so that it is not entered through a company office or employees' welfare facilities. It must be supplied with suitable furniture, including a desk and chairs, a metal clothing locker for each Government employee, a metal cabinet equipped with a lock for the storage of supplies, and lavatory facilities. Shower-bath facilities shall be furnished in the inspector's quarters, particularly at establishments where slaughtering operations are conducted. Separate toilet room and adequate dressing room facilities must be provided in the inspector's quarters at establishments of such size that the assignment of several inspectors is required.

APPENDIX

SUGGESTED NOTES ON SPECIFICATIONS TO ACCOMPANY DRAWINGS

Building Construction

1. Portland cement plaster is used wherever the words "Cement Plaster" or the letters "P. C." appear on the drawings.

2. All walls are surfaced with an impervious material as indicated on the drawings for each room or area.

3. All floors having drainage facilities are of brick or concrete and sloped about ¼ inch per foot to floor drains. Floors where operations are conducted have a nonslip surface.

4. Ceilings are smooth and flat and have a smooth, impervious surface as indicated on the drawings for each room or area. If there are exposed joists or rafters in the ceilings, they are of dressed lumber or rust-resistant metal and are spaced 36 inches or more on centers.

5. Dressed lumber is used for all exposed interior woodwork.

6. All exposed wood surfaces are painted with a good grade of oil or approved plastic paint or treated with hot linseed oil or a clear wood sealer.

7. All window and door openings and other openings that would admit flies are provided with effective insect screens or fly chaser fans. Also, effective means are provided to preclude rodents from entering buildings.

8. Glass in windows and skylights has a high transmissibility of light. Effective measures, such as the use of heat absorbing glass, glass block, or monitors and sawtooth skylights with sash facing north, are taken in workrooms to avoid objectionable heat and glare from the sun's rays during the summer season.

9. Rails are placed not less than 2 feet from walls, posts, and other fixed parts of the building. Header rails are spaced at least 3 feet from adjacent walls and columns.

10. Two retaining compartments constructed of rust-resistant No. 9 gage wire partitions or expanded metal of approximate gage, about 1-inch mesh, extending from about 2 inches above the floor to the ceiling, are provided as indicated on the drawings. The doors of these compartments are of similar material and are equipped for locking with an MID padlock or seal. One compartment is for holding retained carcasses and product in a cooler and the other is for holding carcasses affected with cysticercus bovis in a freezer at a temperature not higher than 15° F. for at least 10 days.

11. All doors of toilet rooms and dressing rooms and toilet room vestibules are solid, self-closing, and completely fill the openings, except as otherwise shown on the drawings.

12. All inside window ledges are sloped about 45°.

13. Doorways through which products are transferred on rails or in hand trucks are at least 5 feet wide, or in the case of doorways through which 11 feet or higher rails pass, at least 4½ feet wide.

14. Doors are of rust-resistant metal, or in case of cooler doors of wood construction, they are clad on both sides with heavy rust-resistant metal and any seams are soldered or welded. The juncture of metal clad door jambs and the walls are effectively sealed with a flexible sealing compound.

15. Glass blocks used in wall panels, etc., have smooth exposed surfaces.

16. Suitable coves to facilitate sanitary maintenance are provided at junctions between walls and floors.

17. Stairs are of impervious material and have solid treads, closed risers and side curbs 6 inches high measured at the front edge of the step.

18. The livestock pens are paved with impervious material, such as concrete or brick, and pitched to suitable drainage facilities. Curbs at least 12 inches high of impervious material, such as concrete, are provided around the borders of the livestock pen area, except at entrances, to confine liquids and material. A suitable suspect pen and squeeze pen are provided in locations shown on drawings. Good artificial lighting is provided in the livestock pen area for the performance of ante-mortem inspection at times when there is insufficient daylight. Well-located hose connections are provided for the cleanup of the livestock pens. Watering troughs are located over or adjacent to pen floor drains and are equipped with suitable overflow outlets. A reasonable portion of the livestock pens, including the area with the suspect pen and squeeze gate, has a weathertight roof.

19. Floor openings for chutes, etc., and for stairways except at entrances have curbs of impervious material, such as concrete or metal, at least 12 inches high to exclude floor drainage.

20. Effective means, such as expanded metal or wire with a mesh not exceeding ½ inch embedded in the walls and floors at their junctions and extending vertically and horizontally an adequate distance, or other effective means, are provided to exclude the entrance of rats and other rodents into rooms.

Water Supply, Plumbing, Drainage, and Refrigeration

1. The potable water supply is obtained from (indicate source of supply, e.g., wells, City of _____), and is effectively protected from pollution.

2. An ample supply of hot water at adequate temperature and under suitable pressure and properly distributed throughout the plant is provided. Hose connections for supplying hot and cold water are provided in the various workrooms at the approximate locations shown on the drawings. Hot water of at least 180° F. at hose outlets is supplied for cleaning the slaughtering, inedible and similar departments, and for sterilizing equipment such as cattle viscera inspection trucks. A thermometer having an easily read dial-type scale is provided on the common water line at the place where viscera trucks are cleaned and sterilized.

3. Only clean and not recirculated water is used in the hog dehairer. (This applies to small installations. In large installations, clean water is required in at least the last 6 feet of the dehairer.)

4. Each lavatory (hand-washing basin) is supplied with hot and cold water delivered through a combination mixing faucet with outlet about 12 inches above the rim of the bowl, liquid soap and an adequate supply of sanitary towels in suitable dispensers, and a suitable receptacle for used towels. Lavatories are pedal operated.

5. Sanitary drinking fountains are provided in the slaughtering and processing departments and in the dressing rooms. If placed adjoining a lavatory, they are located high enough to avoid splash from the lavatory.

6. All equipment wasting water is installed so that waste water is delivered into the drainage system without flowing over the floor. Drainage from edible products handling equipment such as sausage tables, cook tanks, tripe scalders, etc., is delivered to the drainage system by means of interrupted connections.

7. Effective means are taken to prevent back-siphonage of liquids into the potable water supply or steam lines. Back-siphonage of liquids into potable water supply is prevented by placing water lines to equipment, such as cooking or soaking vats and the like, higher than the highest level reached by liquids in the vats, etc.

8. The sewage from the plant is discharged into the city sewer system (furnish description of facilities if other method of disposal is employed).

9. Toilet soil lines are separate from house drainage lines to a point outside of the building and bypass the grease catch basin (if there is one at the plant).

10. Floor drainage lines inside buildings are of metal and have an inside diameter of at least 4 inches, properly vented to the outside air to a point above the roof. Each drainage inlet is equipped with a deep seal trap. All floor drains and vent lines are provided with facilities to exclude rodents.

11. Discharge lines for paunch contents are of cast iron or steel pipe at least 8 inches in diameter (hog stomach contents lines are at least 6 inches) and discharge into a sump from which the material is pumped to an elevated tank for dewatering. The tank is so constructed that the solids can be discharged directly into a watertight truck for removal from the plant. The paunch contents are removed daily or oftener as may be necessary and are disposed of in such a manner as not to create a nuisance or other objectionable condition. The construction of the dewatering tank is shown on a detail drawing. The area adjoining the tank where the truck stands during loading is paved with concrete and provided with suitable drainage facilities. A hose connection for supplying hot water for cleanup is provided nearby. The capacity of the dewatering tank is sufficient for holding the paunch contents derived from the maximum daily slaughter of cattle. At least 2½-cubic-feet capacity per animal is provided. Paunch and stomach contents lines are not connected to the regular drainage lines within the plant.

12. Blood drains are provided with long-neck deep-seal traps properly vented to a point above the roof.

13. Blood is discharged into a metal receiving tank and transferred by gravity or a pump or blowline (to a metal truck for removal from the plant) (to processing equipment in the plant). [Use appropriate statement.]

14. The grease catch basin is not located in or near an edible department and is constructed so that it can be completely drained of its contents for cleaning daily and is without cover for ready inspection. Grease skimmed from the basin is (placed in watertight containers and promptly removed from the plant) (blown to inedible processing equipment in the plant). [Use appropriate statement.] A hose connection for supplying hot water for cleaning the basin and adjacent area is provided in a convenient location. The area around the basin is paved with concrete and provided with drainage facilties. The location and construction of the basin is shown on detailed drawing.

15. Heat to dispel steam and vapor is provided in unrefrigerated workrooms.

16. Refrigerated rooms are maintained at a temperature not higher than 50° F.

17. The coolers are refrigerated by means of (select appropriate statement below) (*a*) Overhead refrigerating units with insulated drip pans beneath them, properly connected to the drainage system. (*b*) Floor-type refrigerating units placed within curbed and separately drained area unless located adjacent to floor drains. (*c*) Wall refrigerating coils with drip gutters of impervious material, such as concrete, beneath them, properly connected to the drainage system.

Equipment

1. All equipment is designed, constructed, and located in strict conformity with standards given on pages 7 to 18 in Agriculture Handbook No. 191.

2. Chutes for the transfer of product are so constructed that they can be readily cleaned (long chutes, due to difficulty of cleaning, should be avoided). Chutes are round in shape or otherwise have well-rounded corners. Chutes leading from edible to inedible products departments are effectively hooded and vented.

3. Cooking vats and like equipment are provided with overflow pipes at least 2 inches in diameter having open-end cleanout tees at their upper ends and are connected to the drainage system by means of interrupted drains. Valves on drainage lines leading from such equipment are located flush with bottom of equipment.

4. A suitable room or space and facilities for washing gambrels, beef hooks, trolleys, etc., are provided in a convenient location as shown and an exhaust fan is installed in an outside wall for dispelling steam.

5. The hog scalding vat is constructed of metal.

6. Platforms for eviscerators and openers are constructed of suitable metal grating and of a type that can be readily cleaned (not subway type grating). Foot platforms for employees performing such operations as hind-legging, crotch opening, udder removal, etc., in "on-the-rail" cattle or calf slaughtering departments are constructed with legs set in sufficiently to prevent contact between the forelegs of the cattle and the platform legs, or such foot platforms are suspended from the ceiling.

7. The pans (or flights) of the moving top viscera inspection table are constructed of stainless steel or similar rust-resistant metal. [Pan (or flight) sizes are given on drawings.] The guardrail is omitted from the section of the viscera inspection table opposite the eviscerator's station. A suitable pan (or flight) sterilizer is provided at the proximal end of the table. The sterilizer is without bottom and the sides extend upward from about 2 inches above the floor. The sterilizing chamber is provided with a vent pipe to the outside air at least 10 inches in diameter. A thermometer with its sensitive element in the hot water line as it enters the sterilizer and with temperature recording scale located so that it can be readily observed by the inspector working alongside the viscera inspection table is provided. A floor drain is provided beneath the sterilizer and the area in which the viscera inspection table is located has separate drainage. Cold water sprays are provided at the proximal and distal ends of the table. The movement of the viscera inspection table is synchronized with the movement of the carcass conveyor. The viscera inspection table is driven by a shaft and worm device and the carcass conveyor and the viscera inspection table are motivated by the same drive. A stop button for controlling the movement of the carcass conveyor and the viscera inspection table is provided in a location convenient for use by the inspector.

8. Booths for flushing and washing cattle heads and calf heads, similar to the equipment shown in Agriculture Handbook No. 191, are provided. All horns and horn butts and pieces of skin are removed from cattle and calf heads before they are flushed and washed. If goat and sheep heads are saved for edible purposes, horns, horn butts, and pieces of pelt are removed from the heads before carcasses are washed after pelting.

9. The paunch emptying table is constructed of rust-resistant metal and the end of the table overhangs the emptying hopper about 12 inches to avoid soiling the cut and serous surfaces of paunches. The sides of the hopper extend vertically below the top of the table at least 3½ feet, and then converge to a discharge opening at least 8 inches in diameter. (See detail drawing.)

10. Edible offal is placed on cages with removable metal drip pans beneath or on suitable trucks provided with similar drip pans and conveyed to the offal cooler. If offal is packed in the coolers, suitable facilities including a table and lavatory are provided.

11. Suitable mechanical equipment is provided for transferring condemned soft material to metal containers or hasher and washer without manual handling of the condemned product.

12. The rendering units and driers in the inedible products rendering department are equipped with effective condensers to suppress objectionable odors. Rendering units are equipped for MID sealing.

13. Curing containers are constructed of stainless steel or MID approved plastics.

14. Pipelines and pumps used in connection with edible product (including edible brine and pickling solutions) are demountable and made of stainless steel or MID approved plastics.

15. The cages or trees used for smoked meats and sausage are so designed that there is a clearance of at least 12 inches between the product and the floor of the smokehouses and hanging rooms. The type and size of this equipment is illustrated by detail drawings on Sheet No. ——. (Insert correct sheet No. of submitted drawings.)

16. Smoke-making equipment, ducts, and smokehouses are so located and designed that all outer and inner surfaces can be readily cleaned.

17. Color changing tags are provided and attached to retort baskets to identify product that has been retorted.

18. A suitable room or separately drained area is provided for washing handtrucks, boxes, trays, demountable parts of sausage stuffing equipment, etc. Two suitable compartments with entrance rails are provided for washing smokehouse cages and trees. The first compartment is used for washing cages and trees with a detergent solution and the second for rinsing this equipment with clean water to remove all detergent solution. The washing compartment has a suitable exhaust duct extending to a point outside of the building.

19. An incubation room for incubating samples of fully processed canned meat product is provided as shown on the drawings. The room is of adequate size for holding not less than 1 percent of fully processed canned product from each run of each retort for at least 10 days. The temperature in the room is maintained by thermostatic control at approximately 98° F., and

the room is provided with a 7-day recording thermometer located on an outside wall so as to be visible from outside the room. The shelves are made of expanded metal and are removable. The sensitive elements of the thermostat and recording thermometer are below the bottom shelf. The floor in the room is pitched to a floor drain equipped with a removable screw plug. The door of the room is equipped for locking with an MID padlock or seal.

20. A suitable rust-resistant metal table with top about 3 by 5 feet is provided in an unobstructed space in a cooler for holding returned product for inspection.

21. Each employee is provided with a metal locker at least 15 by 18 by 60 inches, having a sloping top and with bottom elevated on legs about 16 inches long. Removable plastic or wood seats about 12 inches wide are provided in front of and below the doors of the lockers and are attached to the framework of lockers (Or, A single plastic or wooden seat about 12 inches wide securely attached to the floor by a minimum number of pipe leg supports is located about 2½ feet in front of the lockers). The dressing room will be used by not more than (give number and sex of employees).

22. Clothing lockers have effective means for ventilation, such as doors having louvered openings of adequate size or doors constructed of expanded metal or heavy wire mesh.

23. The inspector's office is provided with suitable furniture, including a desk and chairs, a metal clothing locker (at least as large as that provided for employees) for each inspector, a metal cabinet equipped with a lock for the storage of supplies, and lavatory and toilet facilities.

24. A suitable room or space for the storage of supplies, such as wrapping paper, cartons and containers, is provided in a convenient location as shown. All supplies are placed on racks 12 inches above the floor.

Operations

1. The rate of slaughter is dependent upon the ability of the establishment to present carcasses, their viscera, and parts in an orderly and clean manner, which permits a complete and efficient inspection at all times and does not create congestion or other objectionable conditions of any kind. The estimated maximum rate of slaughter is (give rate for each species).

2. Animals are not slaughtered by the Kosher method (if only nonkosher slaughtering).

3. Hides are not spread for inspection in the slaughtering room.

4. Calf heads are removed from carcasses before they reach the point of transfer (if carcasses are gambrelled approximately 7½ feet above the floor), flushed and washed in the equipment shown on the drawings, and placed on the facilities for inspection as shown on the layout provided.

5. Calves of such size that (a) there is not a clearance of at least 12 inches between the carcass and the floor and (b) the viscera cannot readily be transferred manually and unaided by the eviscerator from carcasses to the viscera inspection pan are not slaughtered on the calf inspection layout. Large calves are skinned and eviscerated as cattle on the cattle slaughtering beds.

6. Udders are not saved for edible product. (If saved, show the facilities for handling and inspecting them and provide duplicate tags to identify with corresponding carcasses.)

7. Duplicate tags are provided and used to identify cattle and/or calf heads with corresponding carcasses.

8. Pieces of meat are washed individually under running water and not in batches.

9. Hog hair is removed from the slaughtering room in watertight metal containers at the end of the day's operations and (removed from the plant in a watertight metal truck and disposed of in such manner as to not create objectionable conditions such as fly breeding or odors) (conveyed to suitable equipment for processing in the plant). [Use appropriate statement.]

10. Condemned and inedible material is transferred to the inedible products department in suitable watertight metal containers (for processing therein) (and removed from the plant daily, or oftener if deemed necessary by the inspector in charge, to an outside rendering plant for disposal). [Use appropriate statement.] Suitable facilities for washing the containers used for such materials are provided.

11. Animals found dead on the premises are disposed of by prompt removal (to a rendering plant) (to inedible products rendering department at the establishment). [Use appropriate statement.]

12. Empty cans are washed in an inverted position with water having a temperature of at least 180° F. or cleaned by an approved jet-vacuum device immediately before filling. If hot water is used for cleaning, an easily read dial-type thermometer is provided in the hot water line of the sterilizer.

13. Retorts are charged by (describe means). Retorts drain into curbed and drained areas or pits or are connected to the drainage system by interrupted drains.

14. Sausage material grinding and chopping, bacon slicing, boning, cutting, and similar operations are conducted in departments having a temperature of approximately 50° F. Such departments are not located in areas where hanging carcasses or exposed product are stored.

15. Vegetables are stored in bulk in a suitable separate room and are handled so as to avoid dissemination of dust. Suitable facilities for the preliminary preparation of vegetables for use in product are provided in a location separate from the processing area. Vegetables such as celery and potatoes are thoroughly washed before being cut up as by dicing.

16. Sawdust is conveyed to and ashes are removed from smokehouses in metal containers having tight fitting lids (when necessary to go through processing departments).

General

1. Each workroom is provided with artificial lighting of good quality having an intensity of at least 20 foot candles for general illumination and at least 50

foot candles at places where inspections are performed and where plant operations require establishment employees to prepare products of any character to meet the inspection requirements.

2. Outer clothing of employees, shroud cloths, etc., are laundered at (the plant laundry) (an outside laundry). [Use appropriate statement.]

3. Roadways on the premises adjoining the plant are hard surfaced and have a binder of asphalt, tar, or cement, and are properly drained. Vehicular loading and unloading areas adjacent to the plant and livestock pens are concrete paved and properly drained.

4. Wall-mounted cabinets, electrical control panels, and the like have a clear space of at least 1 inch between the mounted units and the wall.

5. Artificial light fixtures in rooms where exposed meat is handled or processed are provided with a protective shield of suitable nonshattering material such as Plexiglas so as to preclude contamination of product with broken glass.

SUMMARY OF PRINCIPAL MINIMUM DISTANCES

(Rail heights are measured from top of rail to highest part of floor)

Cattle Slaughtering Departments

Description	*Vertical distances*
Bleeding rail (distance from rail to point of application of shackle to shackled foot—48")	16' 0"
Dressing rails (trolley length—15")	11' 0"
Beef cooler rails (trolley length—15")	11' 0"
Rails for beef quarters (trolley length—15")	7' 6"
Moving equipment—Heights of conveyor rails, platforms, top of viscera inspection table, etc	See attached drawings

	Horizontal distances
Dry area in front of stunning pen	7'x8'
Curb of bleeding area to pritch plates (no header rail)	5' 0"
Line of drop-offs to line of half hoists (2 beds)	16' 0"
Line of drop-offs to line of half hoists (3 beds or more)	18' 0"
Line of half hoists to header rail leading to cooler (double rail)	14' 0"
Line of half hoists to header rail leading to cooler (single rail)	10' 0"
Between header rail and carcass washing rail, if parallel	6' 0"
Between header or washing rails and wall of slaughtering room	3' 0"
Between center lines of dressing beds	8' 0"
Between moving top table and dressing rail at inspector's platform	5' 6"
Area for sterilizing viscera inspection truck	7'x8'

Calf and Sheep Slaughtering Departments

	Vertical distances
Bleeding rails for calves (distance from top of rail to point of application of shackle to shackled foot—30")	11' 0"
Bleeding rails if only sheep are slaughtered	9' 0"
Gambrels or leg hooks from which calf or sheep carcasses are suspended to floor or inspector's foot platform	7' 6"
Cooler rails, calf carcasses	Gambrels 7' 6" above floor
Cooler rails, sheep carcasses on logs	Hooks of logs 6' 6" above floor
Moving equipment	See attached drawings

	Horizontal distances
Vertical of rail to edge of viscera inspection stand	2' 0"
Length of rail from point of evisceration to point where carcass inspection is completed	6' 0"

Hog Slaughtering Departments

Description	*Vertical distances*
Bleeding rail to sticker's platform	10' 6"
Extension of bleeding rail to top edge of scalding vat	9' 0"
Dressing rails	11' 0"
Gambrels (suspending carcasses) to floor (12" trolleys)	10' 0"
Distances from rail to bottoms of inspection pans and various foot platforms	See attached drawings
Rails in coolers for hog carcasses with heads removed (12" trolleys)	9' 0"
Rails in coolers for carcasses with heads attached (12" trolleys)	10' 0"

	Horizontal distances
Vertical of dressing rail to various foot platforms and widths of platforms	See attached drawings

Horse Slaughtering Departments

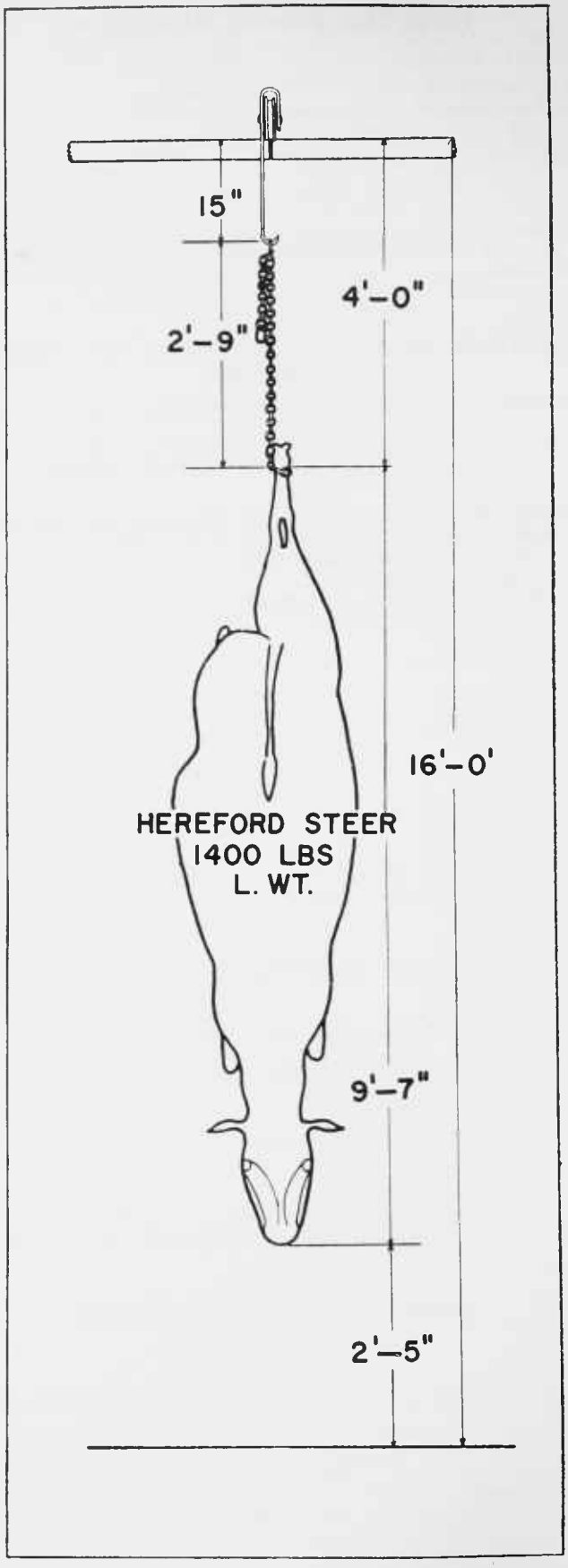
	Vertical distances
Bleeding rail	18′ 0″
Dressing rails (trolley length 15″)	12′ 6″
Cooler rails (trolley length 15″)	12′ 6″
Cooler rails for carcasses in quarters	8′ 6″

	Horizontal distances
Line of drop-offs to line of half hoists	17′ 0″
Clearance between walls, posts, etc., and adjoining rails in slaughtering rooms and coolers	3′ 0″
Curb of bleeding area to pritch plates	6′ 0″
Dry landing area (minimum)	7′x8′

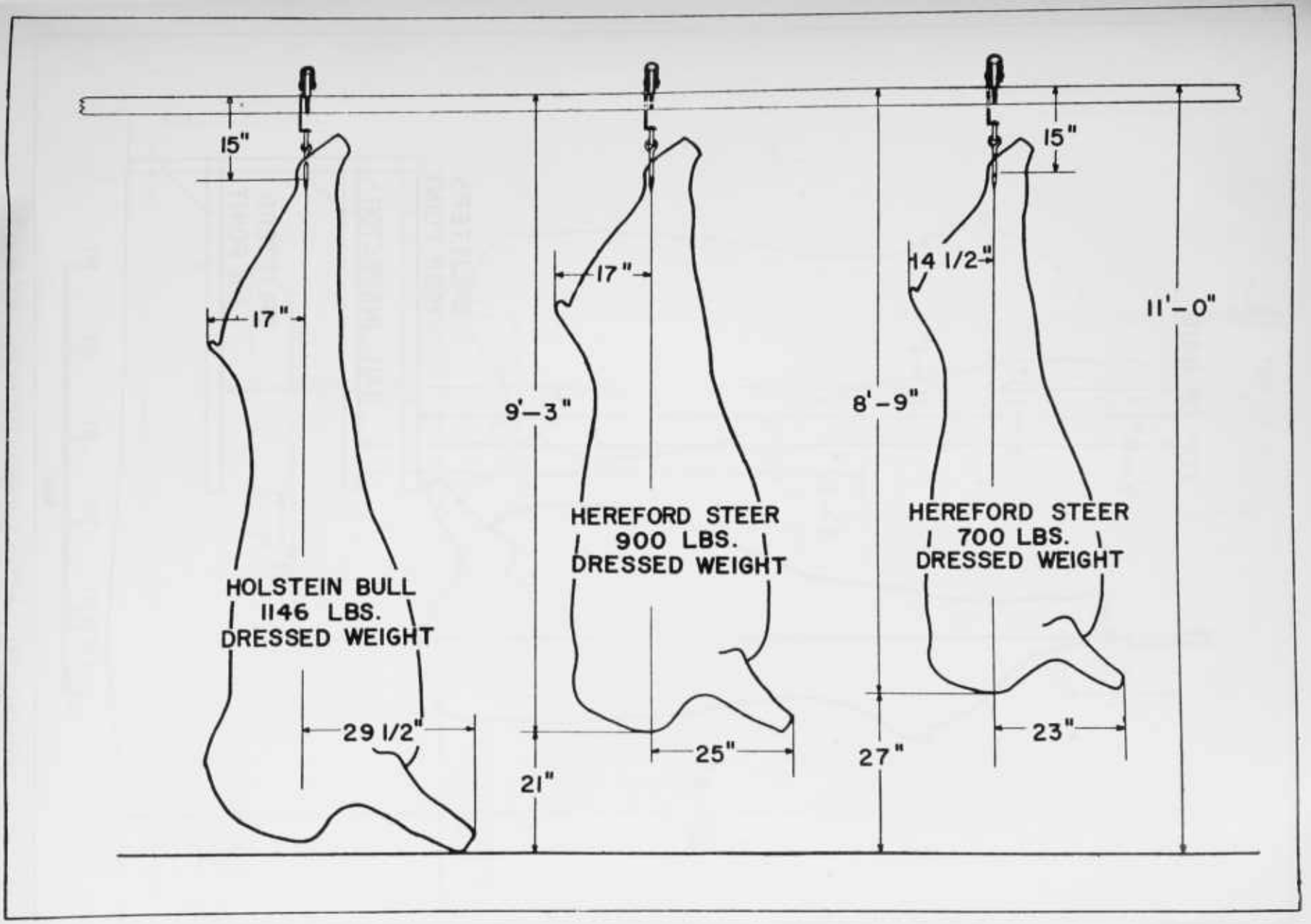
General

Description	*Vertical distances*
Rails for sausage cages, etc	7′ 6″

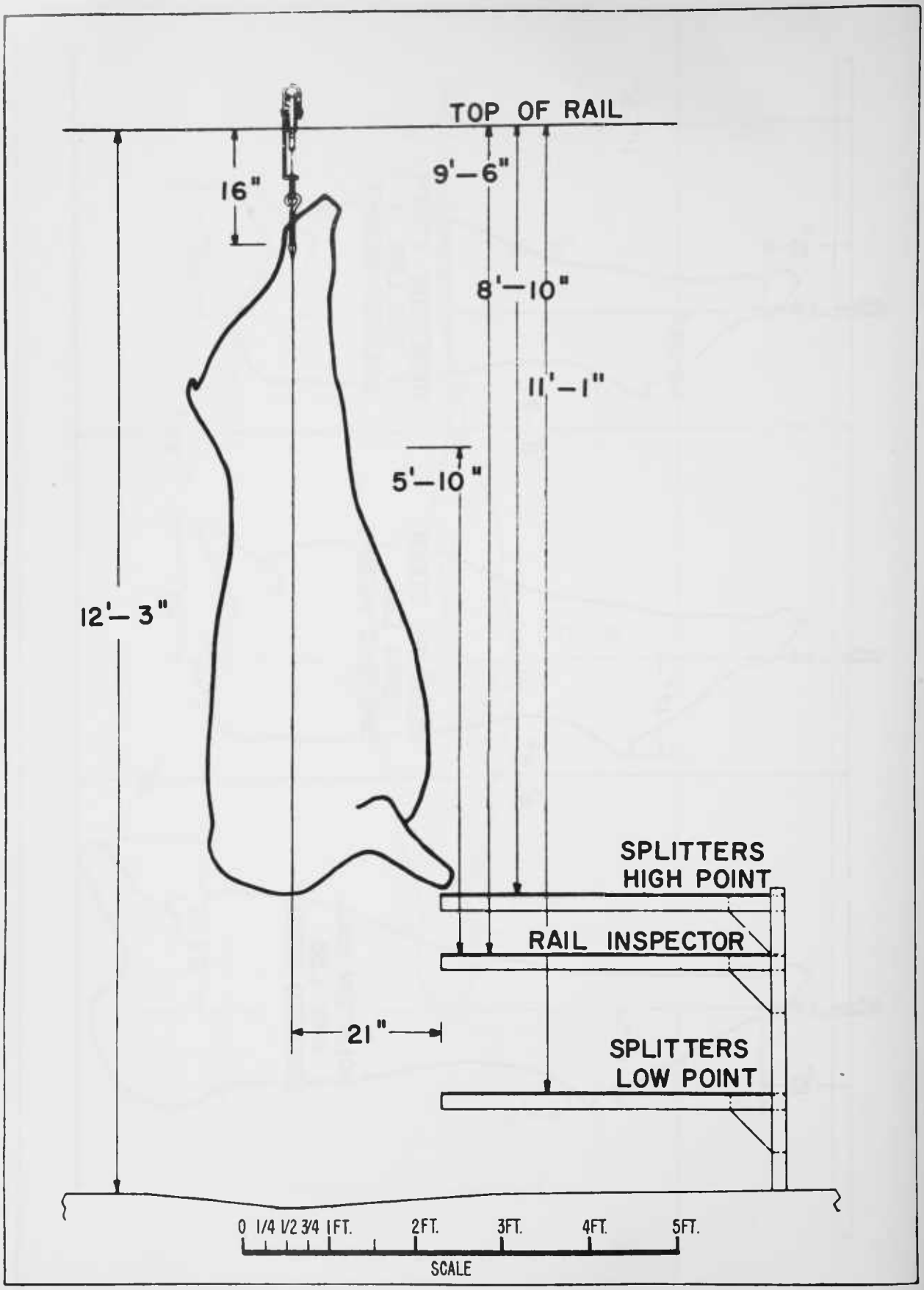
	Horizontal distances
From vertical of rails in slaughtering rooms, coolers, etc., to walls, posts, and other fixed parts of the building	2′ 0″
From vertical conveyor rails for sausage cages to stuffing tables	5′ 0″
From vertical of carcass rails to edge of boning or cutting tables	7′ 0″
Width of doors through which carcasses are railed	4′ 6″
Width of doors through which product is conveyed in hand trucks	5′ 0″
Truckways—unobstructed width	5′ 0″



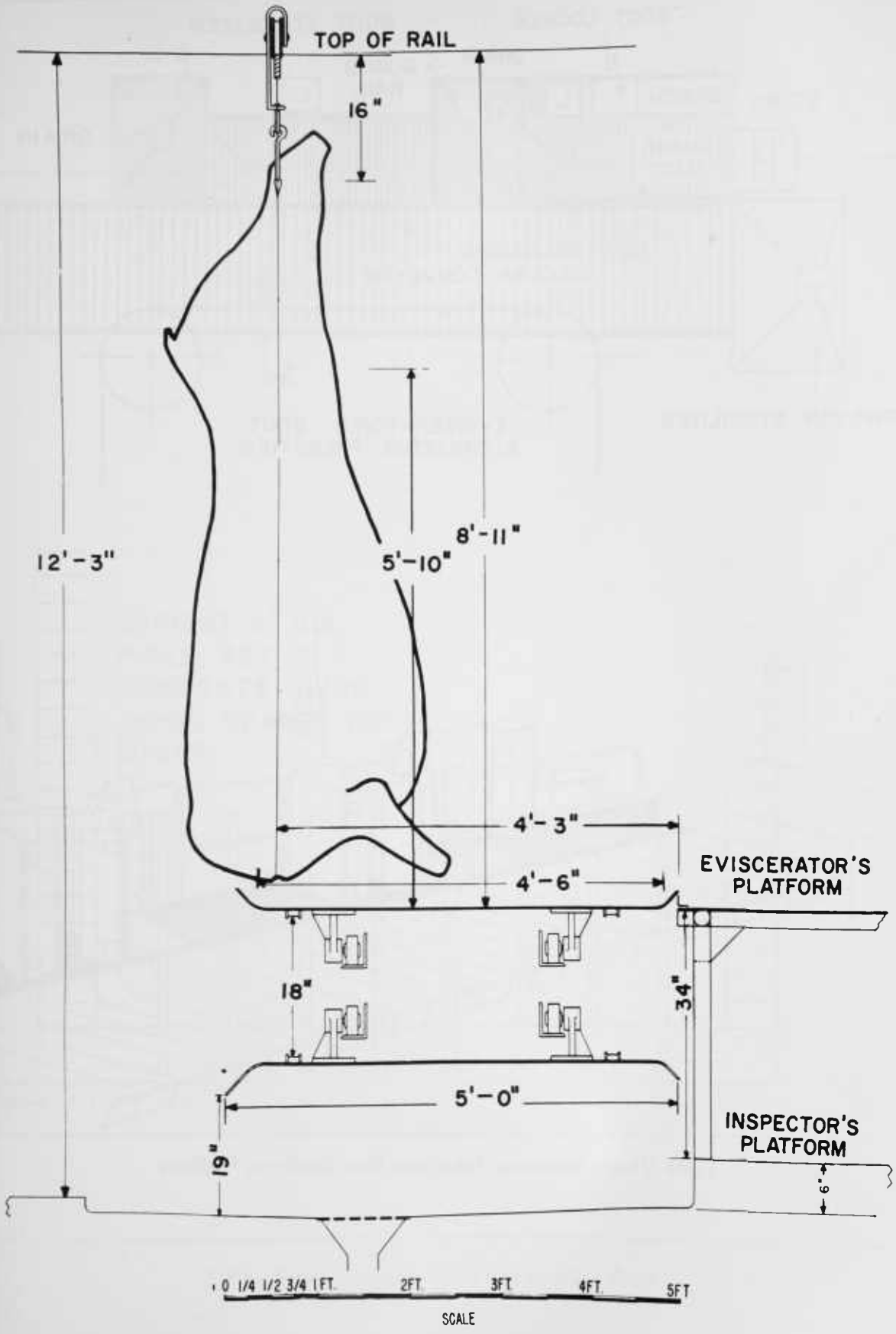
Cattle Carcass on Bleeding Rail



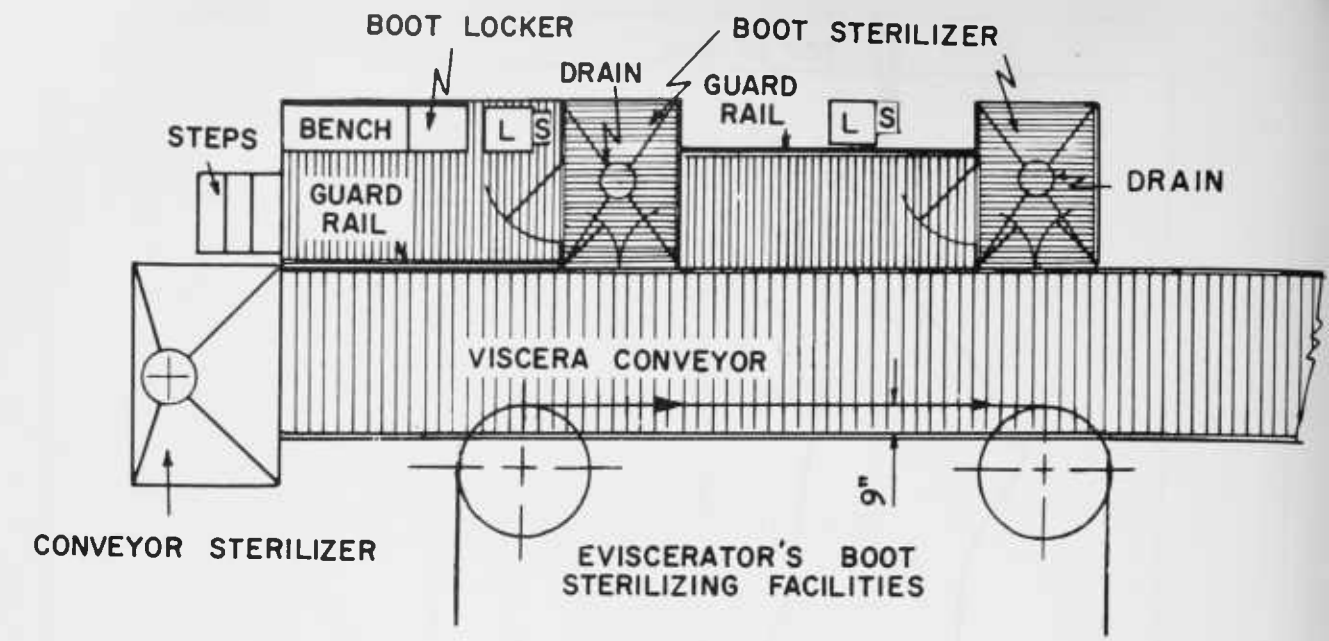
Dressed Cattle Carcass Sides

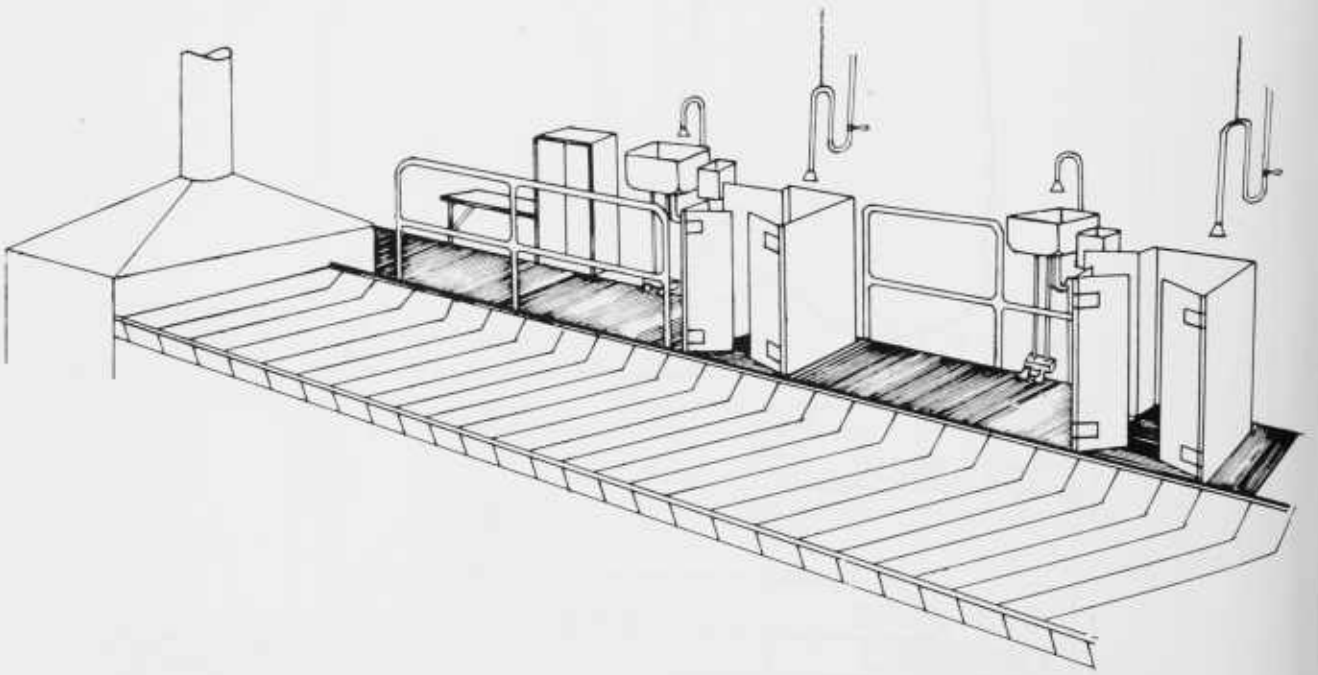


700-Pound Steer Carcass and Relation to Various Foot Platforms

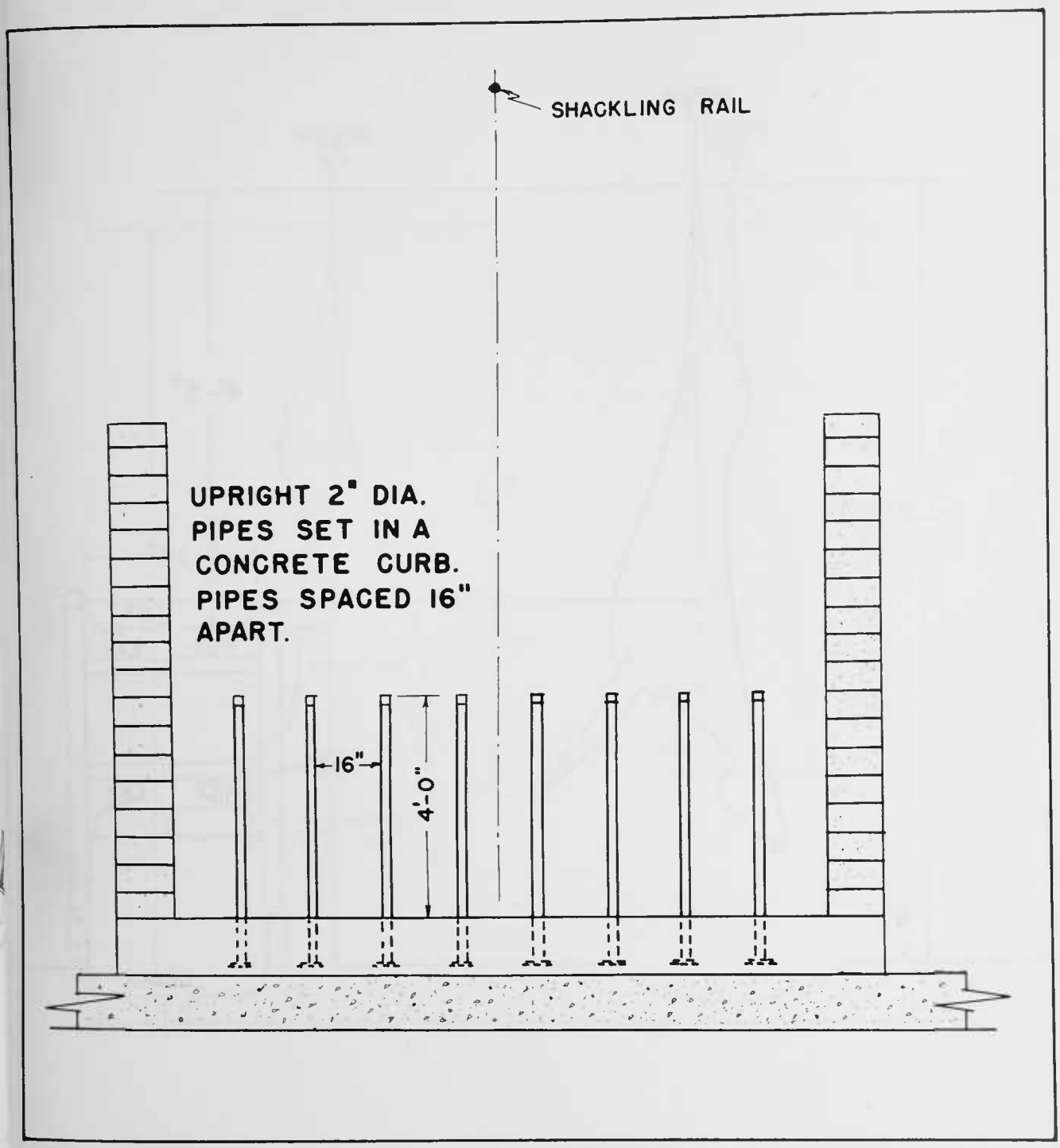


700-Pound Steer Carcass and Relation to Flight-Top Inspection Table

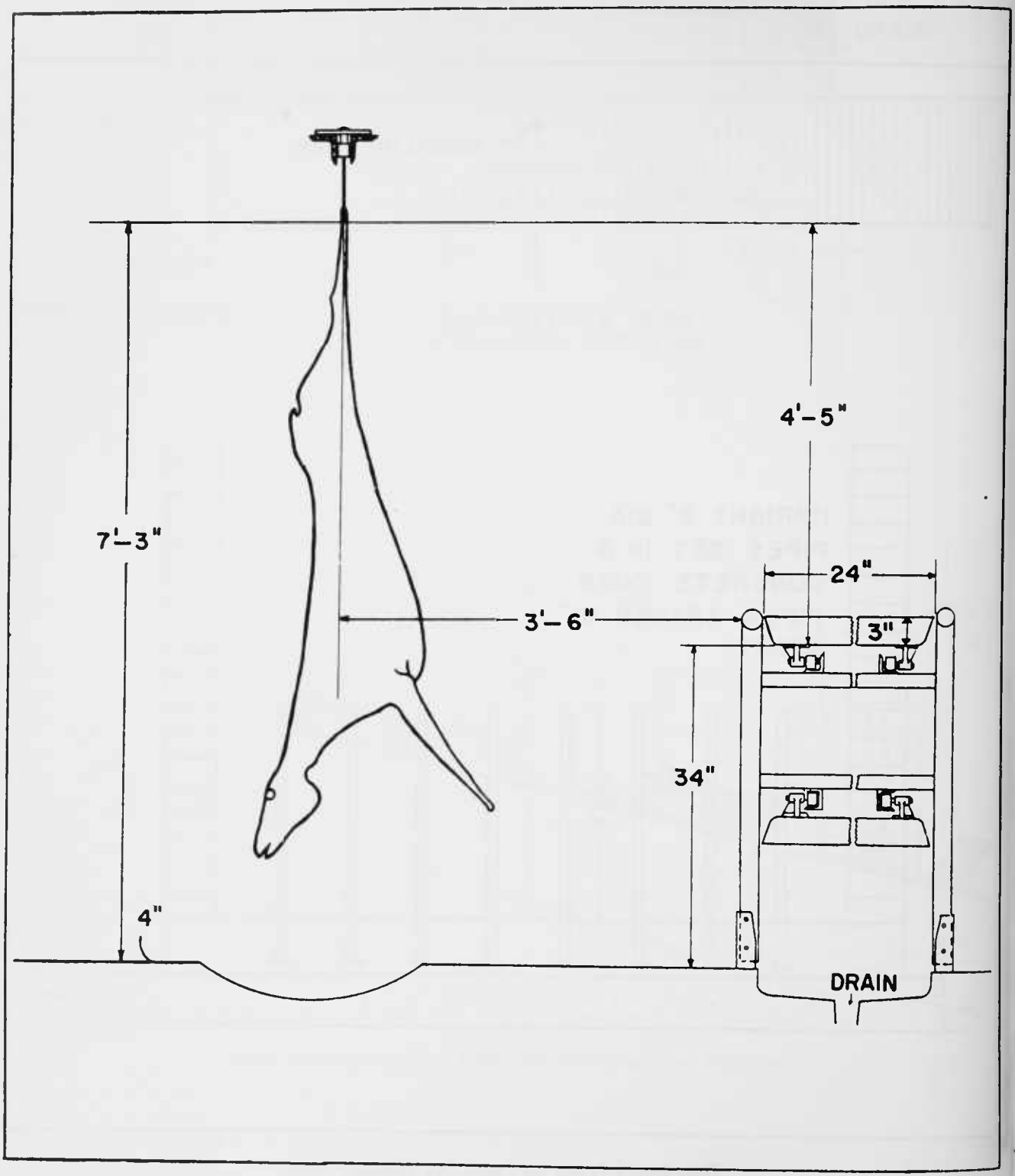




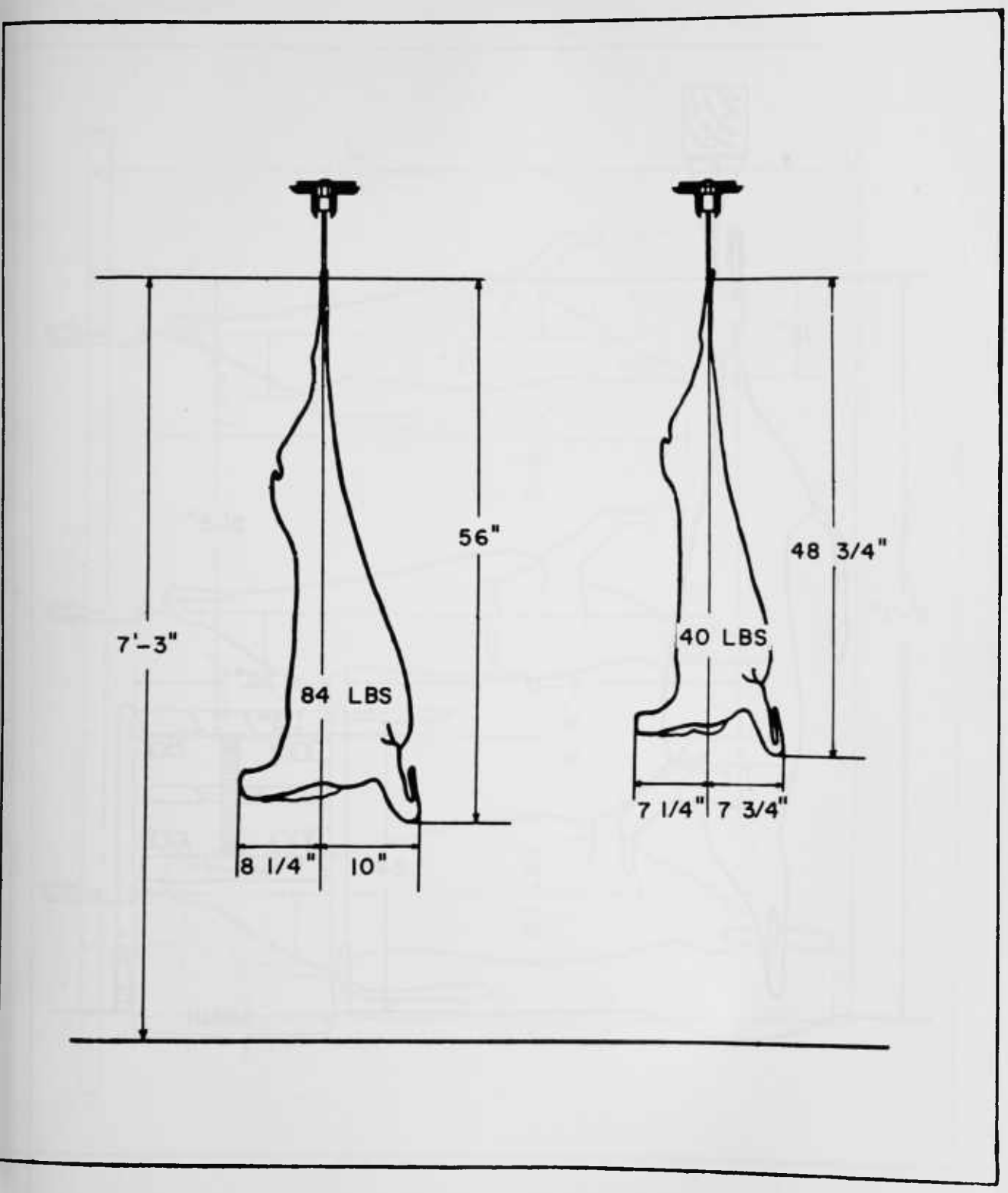
Cattle Viscera Inspection Table and Boot Sterilizing Facilities



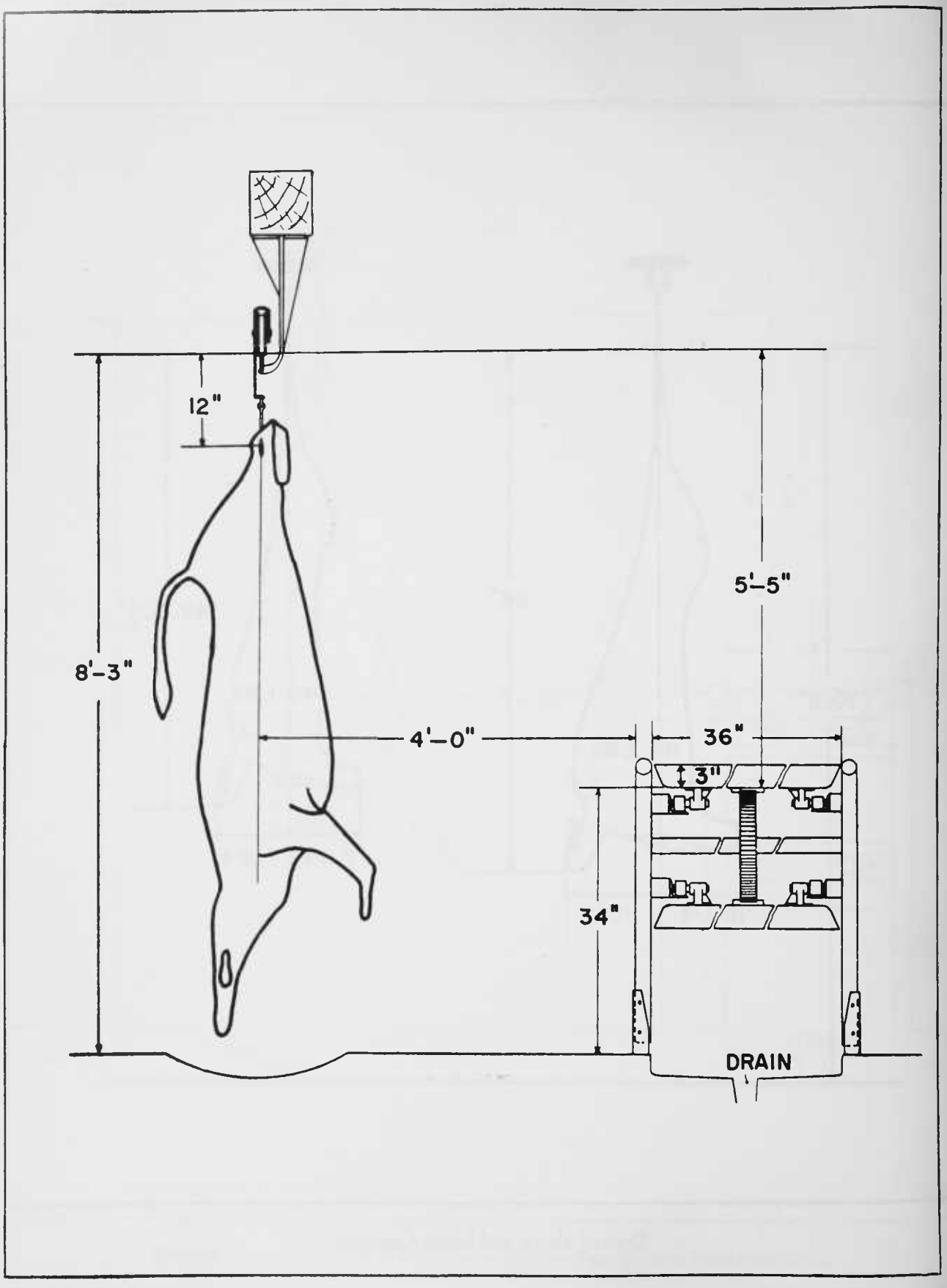
Pipe Safety Fence for Cattle Dry Landing Area



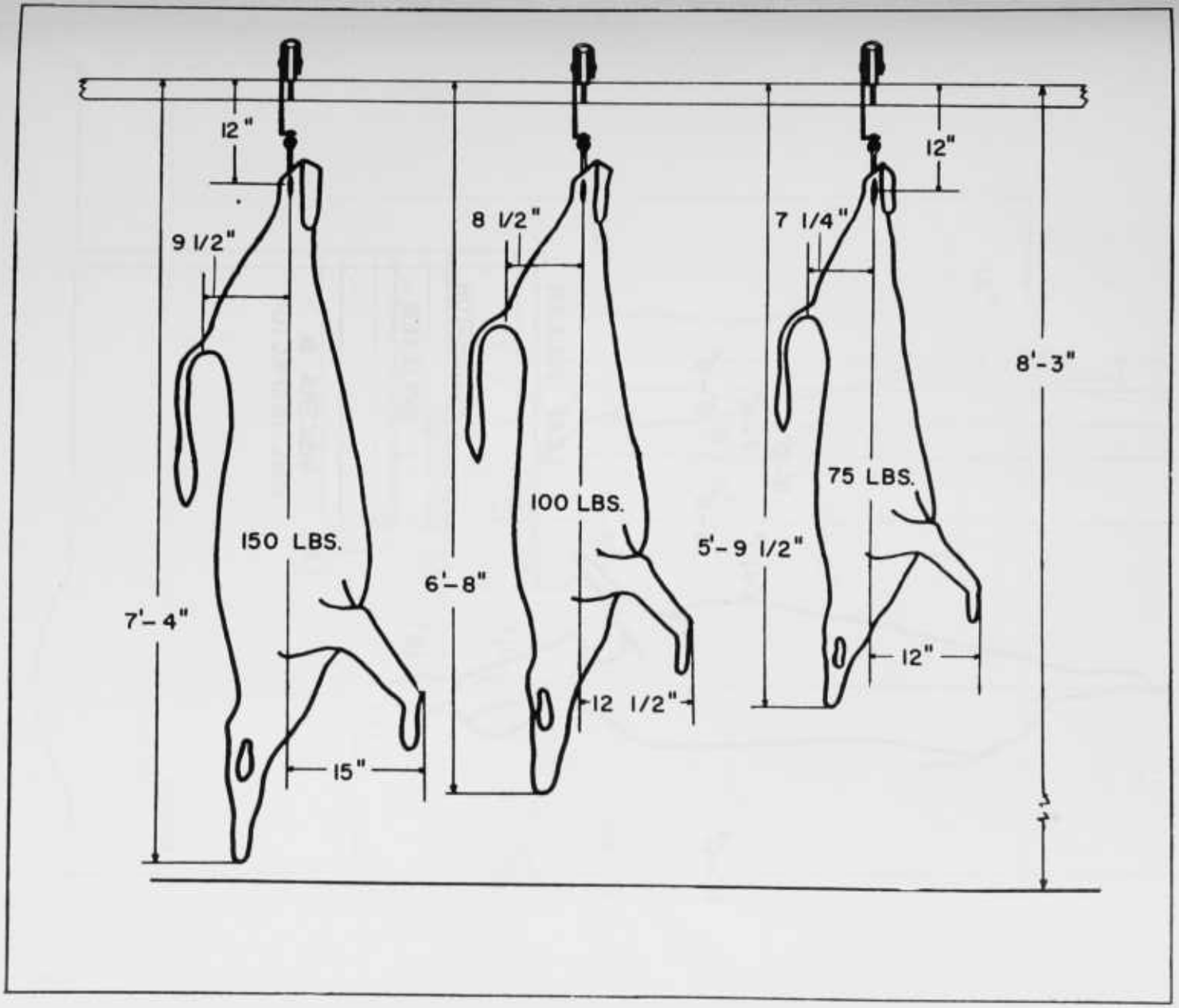
Dressed Sheep Carcass and Relation to Moving-Top Viscera Inspection Table



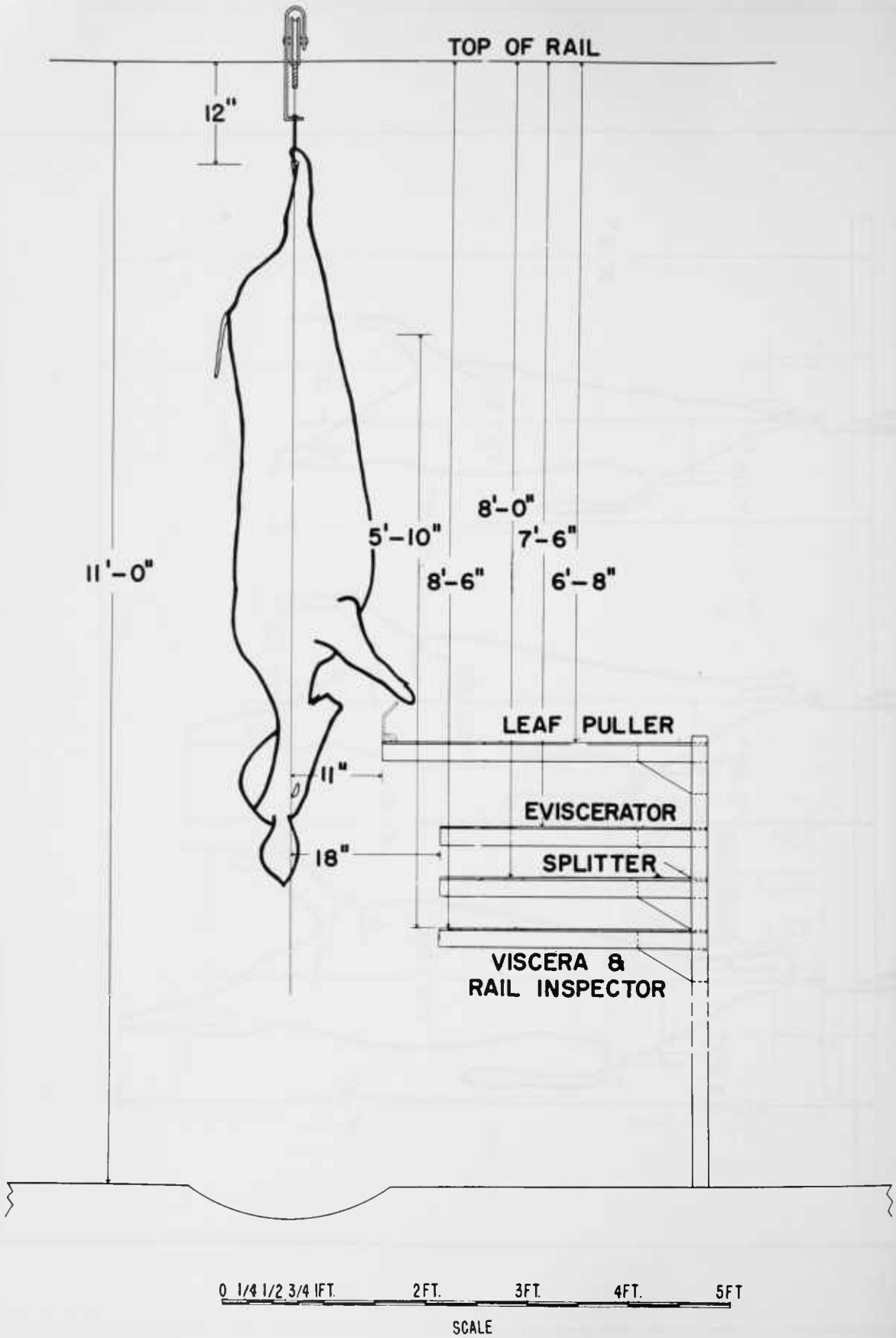
Dressed Sheep and Lamb Carcasses



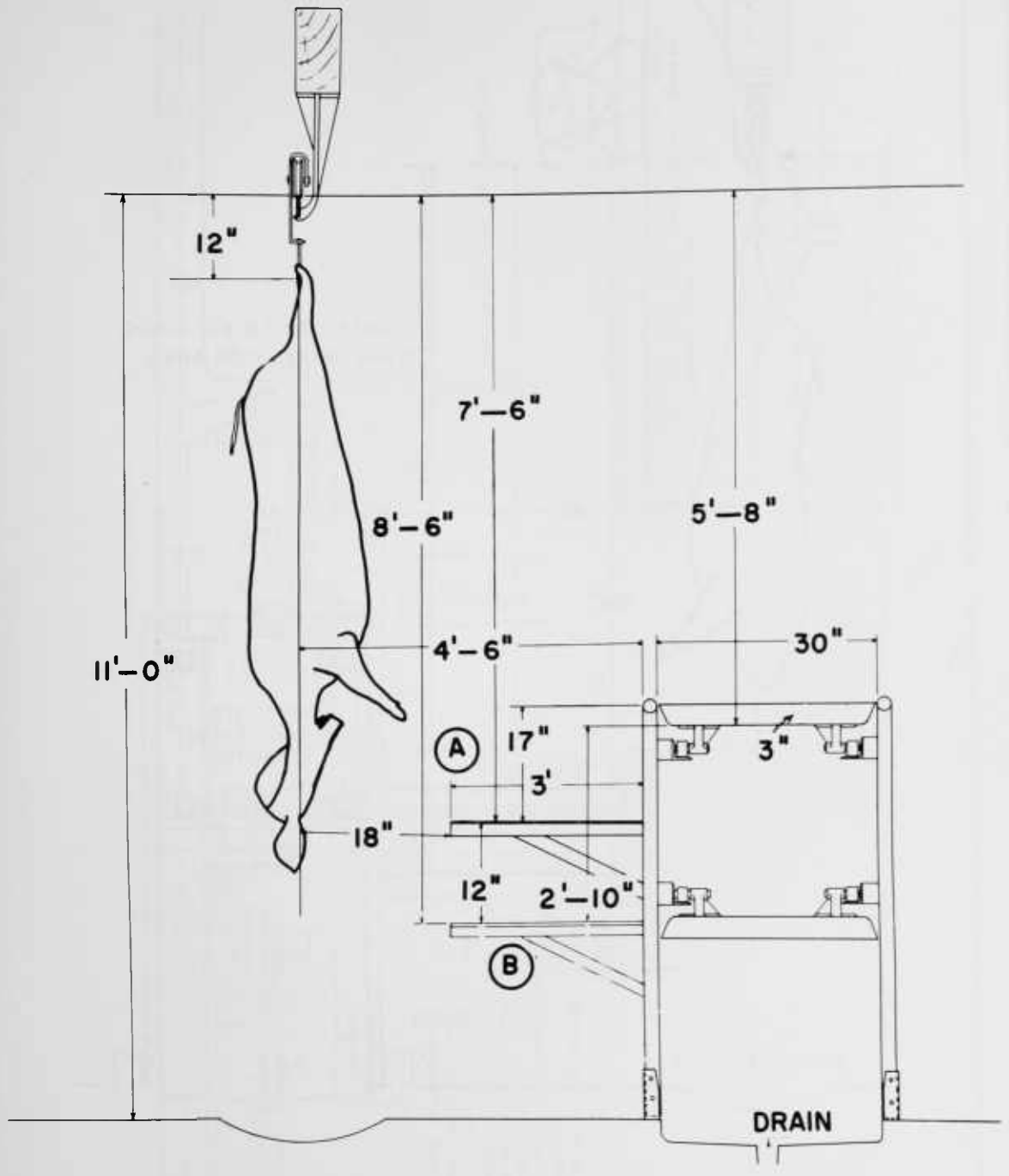
Dressed Calf Carcass and Relation to Moving-Top Viscera Inspection Table



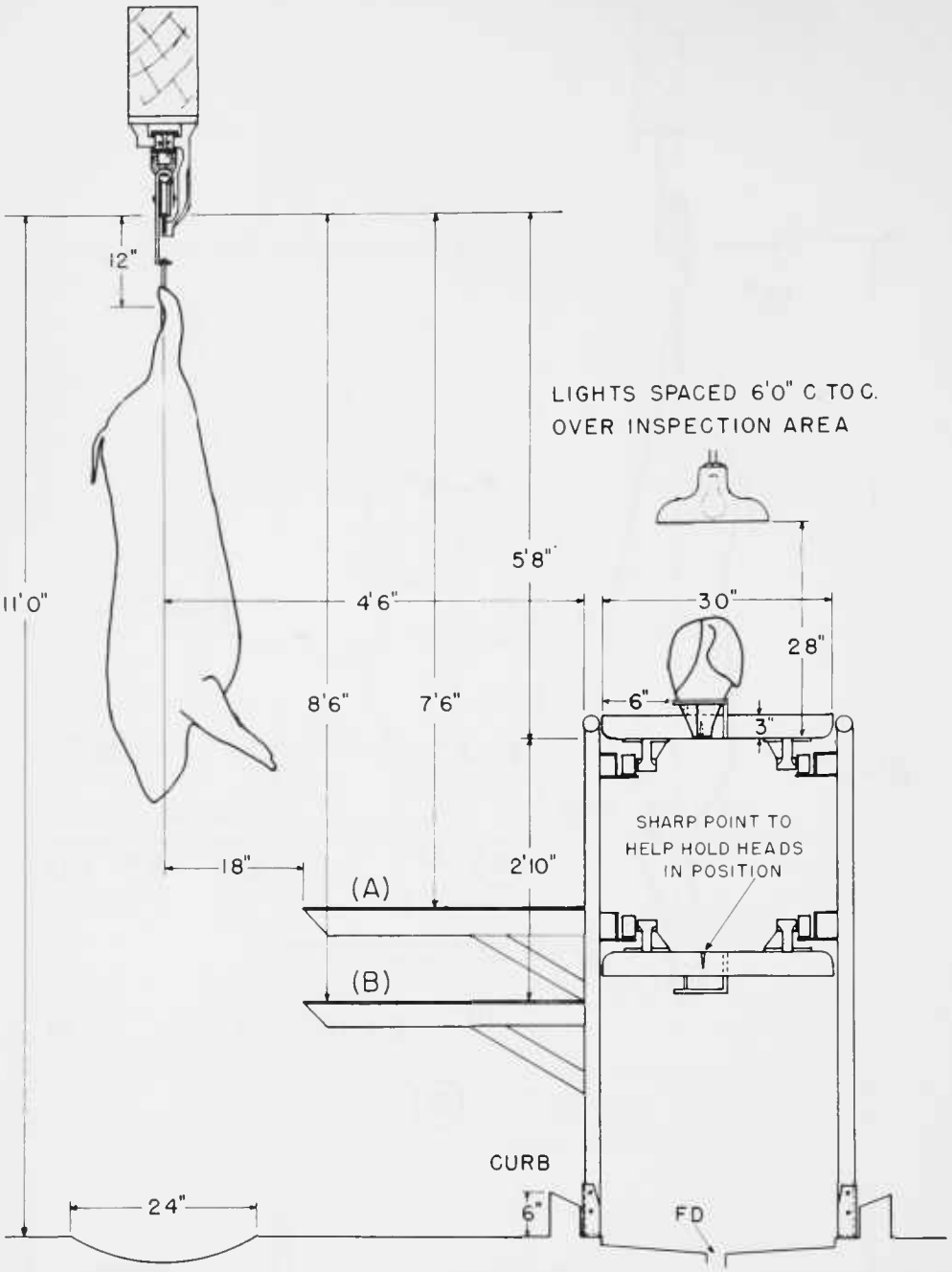
Dressed Calf Carcasses



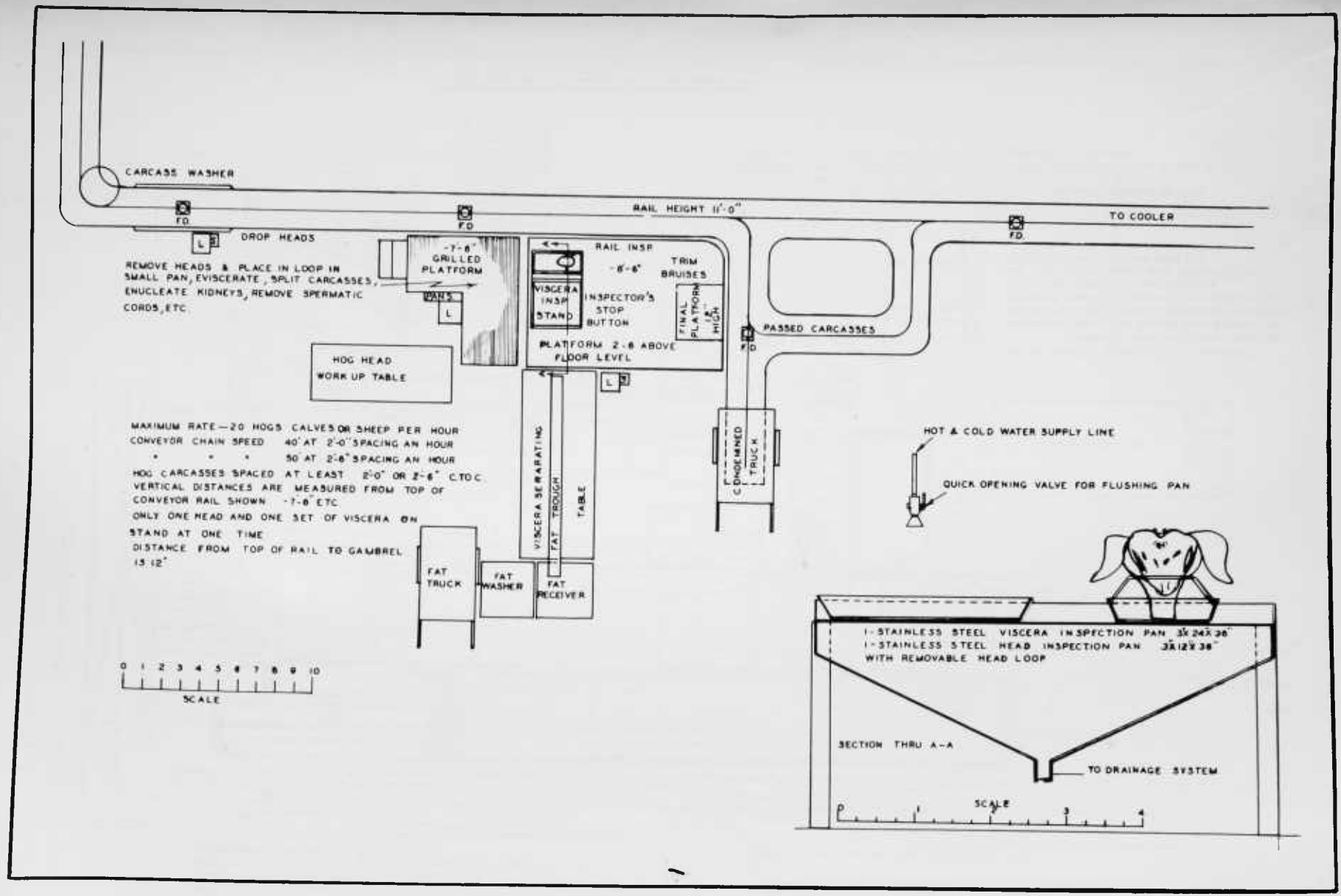
Hog Carcass and Relation to Various Foot Platforms



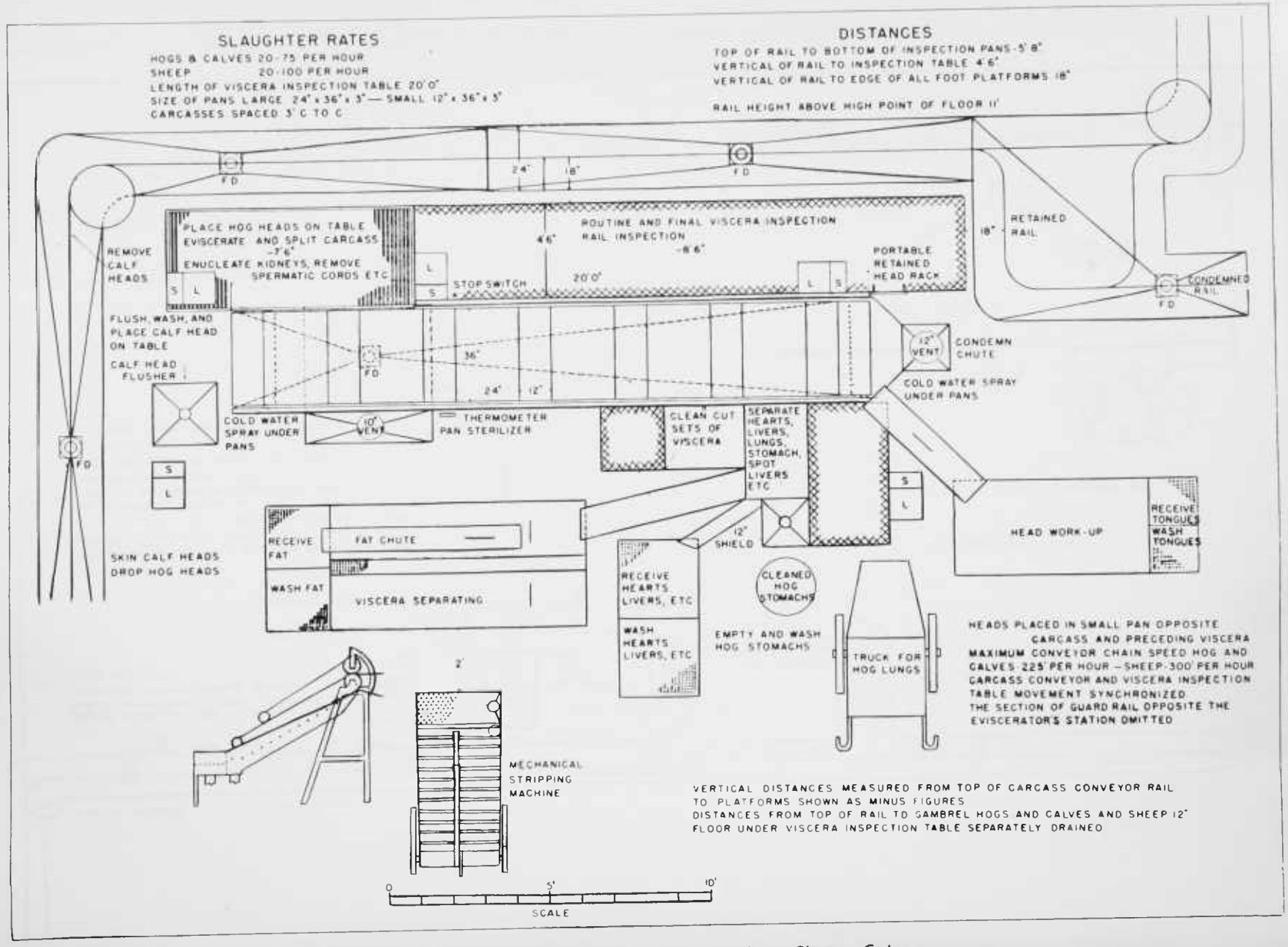
Hog Carcass and Relation to Moving-Top Inspection Table—300 or More Hourly Slaughtering Rate: *A*, Evisceratar's Platfarm; *B*, Inspectar's Platfarm



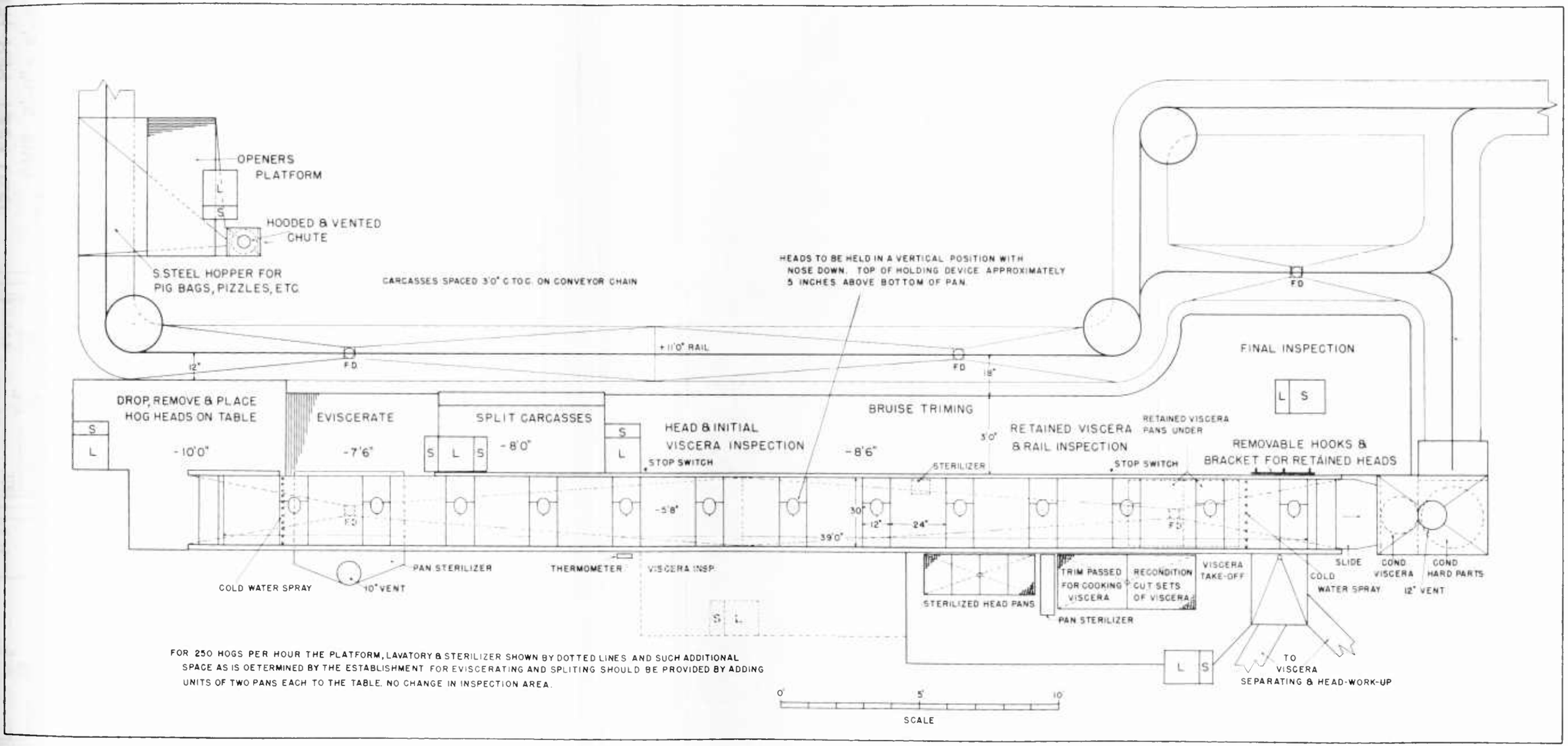
200-Pound Dressed Weight Hag Carcass and Relation ta Maving-Tap Inspectian Table—25–300 Haurly Slaughtering Rate: *A*, Evisceratar's Platform; *B*, Inspectar's Platform



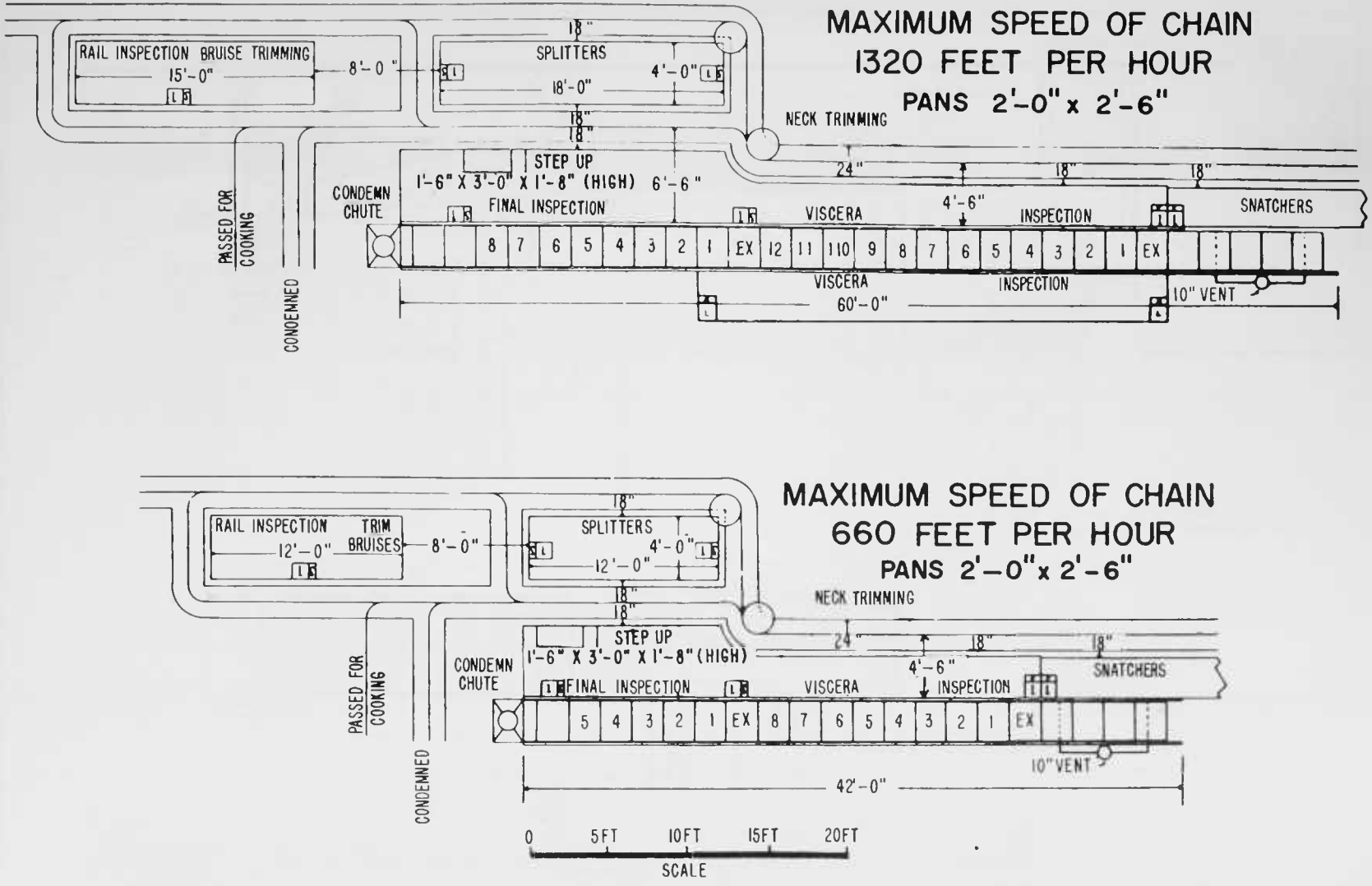
Inspection Facilities for Stationary Table Layout—Hogs, Sheep, Calves



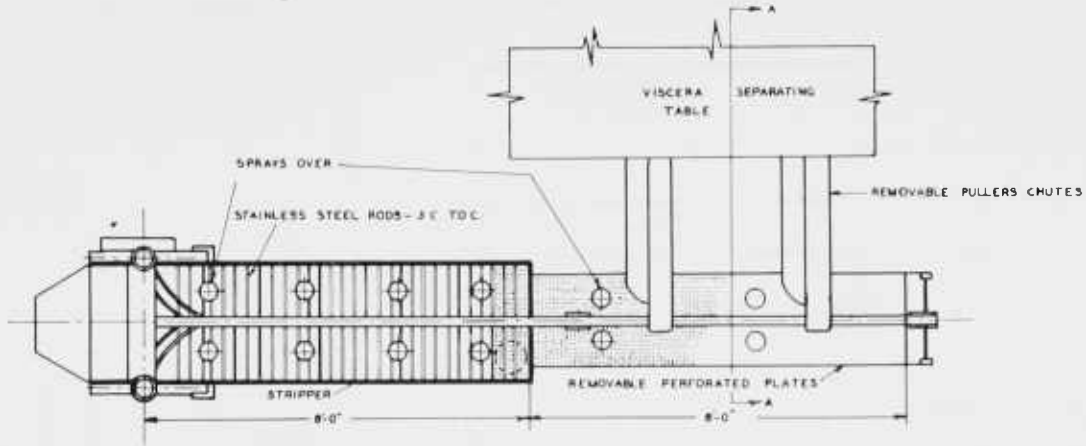
Inspection Facilities for Small Moving-Top Table Layout—Hogs, Sheep, Calves.
(See p. 30 for head-holding device and p. 58 for size of mechanical stripper.)



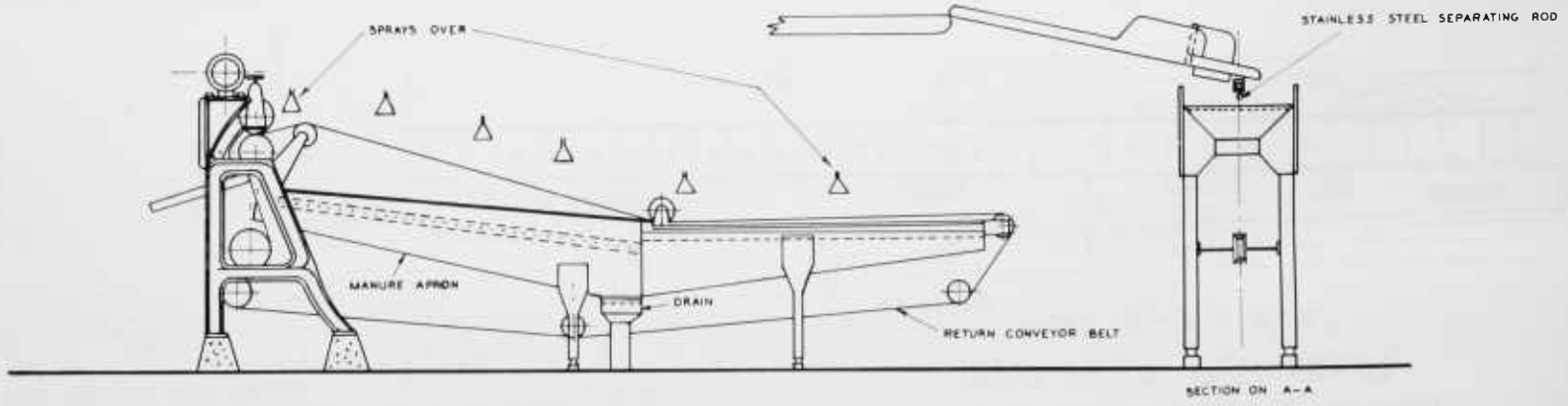
Inspectian Facilities for Medium Size Layaut—Hogs, Sheep, Calves



Inspection Facilities for Large Layout—Hogs

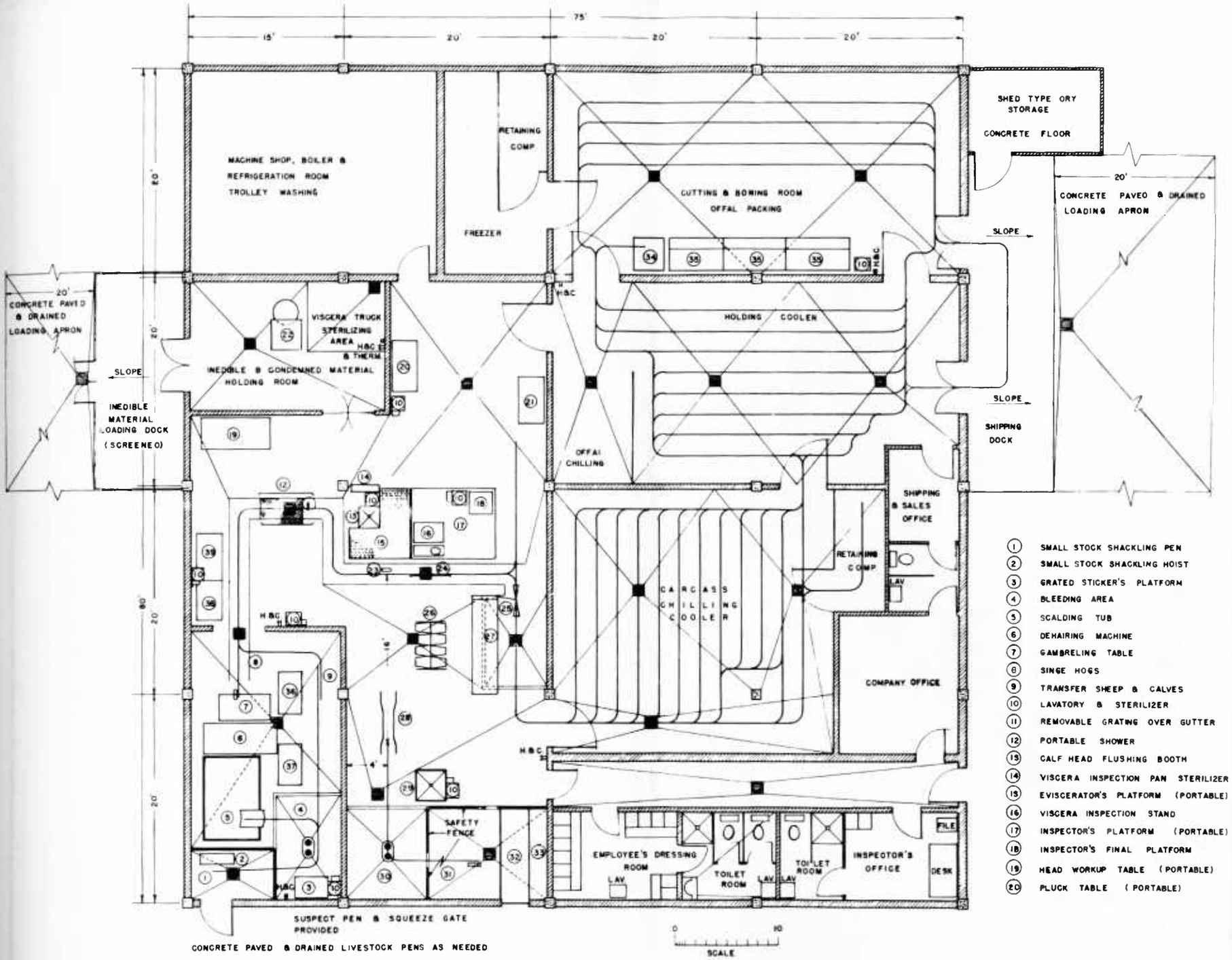


TYPICAL CASING CLEANING LAYOUT FOR PLANTS HAVING NOT MORE THAN THREE PULLERS



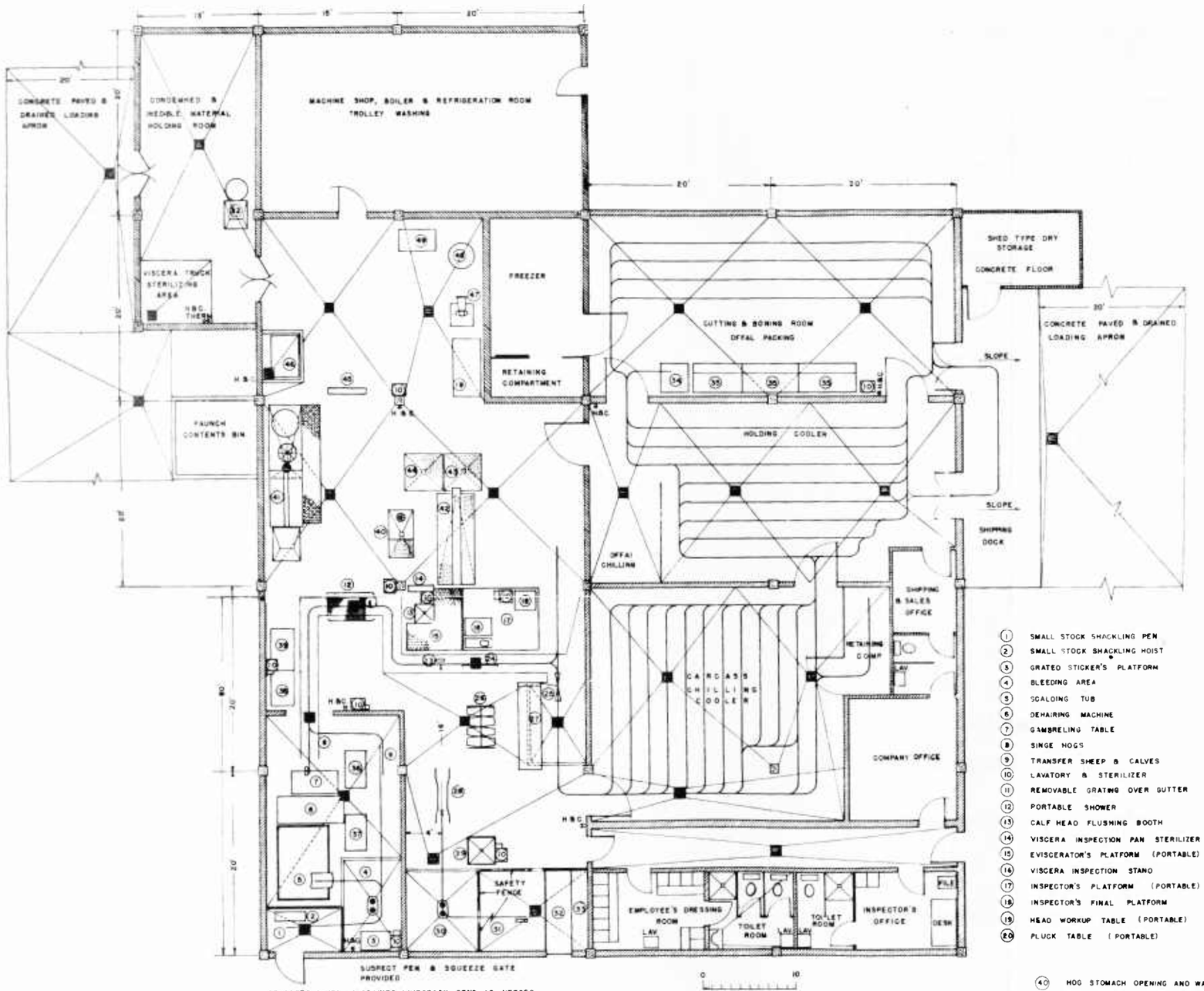
SECTION ON A-A

Hog Casing Stripping Facilities



THIS SUGGESTED SLAUGHTERING LAYOUT IS DESIGNED FOR A SMALL OPERATOR WHO SLAUGHTERS APPROXIMATELY 100 CATTLE AND 300 HEAD OF SMALL STOCK WEEKLY THE FULL CAPACITY OF THIS SLAUGHTERING LAYOUT IS APPROXIMATELY 10 CATTLE OR 20 HEAD OF SMALL STOCK PER HOUR FOR CONSTRUCTION DETAILS, LIGHTING AND VENTILATING REQUIREMENTS AND NECESSARY RAIL HEIGHTS, REFER TO THE LATEST EDITION OF THE BOOKLET INFORMATION FOR APPLICANTS FOR FEDERAL MEAT INSPECTION
THIS LAYOUT DOES NOT INCLUDE FACILITIES FOR PROCESSING BEEF PAUNCHES, HOG STOMACHES, ETC FOR EDIBLE PURPOSES OR FOR EDIBLE OR INEDIBLE RENDERING OF BEEF OR PORK FATS.

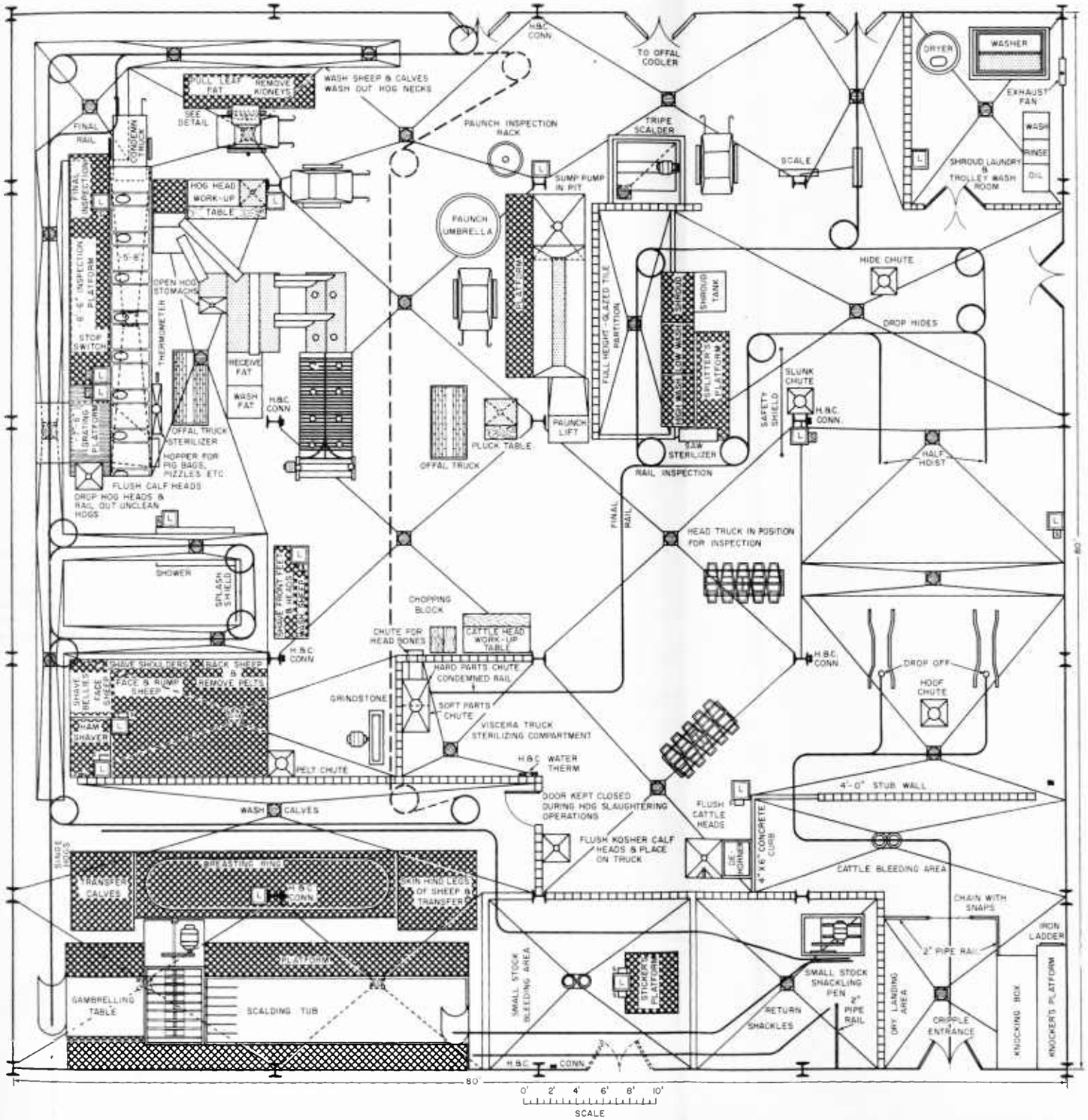
1. SMALL STOCK SHACKLING PEN
2. SMALL STOCK SHACKLING HOIST
3. GRATED STICKER'S PLATFORM
4. BLEEDING AREA
5. SCALDING TUB
6. DEHAIRING MACHINE
7. GAMBRELING TABLE
8. SINGE HOGS
9. TRANSFER SHEEP & CALVES
10. LAVATORY & STERILIZER
11. REMOVABLE GRATING OVER GUTTER
12. PORTABLE SHOWER
13. CALF HEAD FLUSHING BOOTH
14. VISCERA INSPECTION PAN STERILIZER
15. EVISCERATOR'S PLATFORM (PORTABLE)
16. VISCERA INSPECTION STAND
17. INSPECTOR'S PLATFORM (PORTABLE)
18. INSPECTOR'S FINAL PLATFORM
19. HEAD WORKUP TABLE (PORTABLE)
20. PLUCK TABLE (PORTABLE)
21. VISCERA WORKUP TABLE (PORTABLE)
22. SKIP HOIST
23. CATTLE HALF-HOIST
24. CATTLE SPREADER
25. SCALE
26. CATTLE HEAD INSPECTION TRUCK
27. WASHING & SHROUDING PLATFORM
28. CATTLE CRADLE
29. CATTLE HEAD FLUSHING BOOTH
30. CATTLE BLEEDING AREA
31. DRY LANDING AREA
32. KNOCKING BOX
33. KNOCKER'S PLATFORM
34. BAND SAW
35. CUTTING & BONING TABLE
36. TRANSFER PLATFORM
37. CALF WASHING PLATFORM
38. HOG SHAVING PLATFORM (HIGH)
39. HOG SHAVING PLATFORM (LOW)



THIS SUGGESTED SLAUGHTERING LAYOUT IS DESIGNED FOR A SMALL OPERATOR WHO SLAUGHTERS APPROXIMATELY 100 CATTLE AND 300 HEAD OF SMALL STOCK WEEKLY. THE FULL CAPACITY OF THIS SLAUGHTERING LAYOUT IS APPROXIMATELY 10 CATTLE OR 20 HEAD OF SMALL STOCK PER HOUR. FOR CONSTRUCTION DETAILS, LIGHTING AND VENTILATING REQUIREMENTS AND NECESSARY RAIL HEIGHTS, REFER TO THE LATEST EDITION OF THE BOOKLET INFORMATION FOR APPLICANTS FOR FEDERAL MEAT INSPECTION.

1. SMALL STOCK SHACKLING PEN
2. SMALL STOCK SHACKLING HOIST
3. GRATED STICKER'S PLATFORM
4. BLEEDING AREA
5. SCALDING TUB
6. DEHAIRING MACHINE
7. GAMBRELING TABLE
8. SINGE HOGS
9. TRANSFER SHEEP & CALVES
10. LAVATORY & STERILIZER
11. REMOVABLE GRATING OVER GUTTER
12. PORTABLE SHOWER
13. CALF HEAD FLUSHING BOOTH
14. VISCERA INSPECTION PAN STERILIZER
15. EVISCERATOR'S PLATFORM (PORTABLE)
16. VISCERA INSPECTION STAND
17. INSPECTOR'S PLATFORM (PORTABLE)
18. INSPECTOR'S FINAL PLATFORM
19. HEAD WORKUP TABLE (PORTABLE)
20. PLUCK TABLE (PORTABLE)
21. VISCERA WORKUP TABLE (PORTABLE)
22. SKIP HOIST
23. CATTLE HALF-HOIST
24. CATTLE SPREADER
25. SCALE
26. CATTLE HEAD INSPECTION TRUCK
27. WASHING & SHROUDING PLATFORM
28. CATTLE CRADLE
29. CATTLE HEAD FLUSHING BOOTH
30. CATTLE BLEEDING AREA
31. DRY LANDING AREA
32. KNOCKING BOX
33. KNOCKER'S PLATFORM
34. BAND SAW
35. CUTTING & BONING TABLE
36. TRANSFER PLATFORM
37. CALF WASHING PLATFORM
38. HOG SHAVING PLATFORM (HIGH)
39. HOG SHAVING PLATFORM (LOW)
40. HOG STOMACH OPENING AND WASHING TABLE
41. PAUNCH EMPTYING & WASHING TABLE
42. HOG VISCERA SEPARATING TABLE
43. FAT RECEIVING BOX
44. FAT WASHING TABLE
45. PAUNCH INSPECTION RACK
46. PAUNCH & STOMACH WASHER
47. GRINDER (PORTABLE)
48. LARD RENDERING KETTLE
49. LARD SETTLING TANK

Suggested Small Plant Layout



SLAUGHTERING LAYOUT DESIGNED TO PERMIT SLAUGHTERING OF TWO SPECIES OF ANIMALS SIMULTANEOUSLY. FACILITIES CAN BE USED IN A PLANT WITHOUT A BASEMENT AS TRUCKWAYS ARE PROVIDED FOR REMOVAL OF INEDIBLE AND CONDEMNED MATERIAL WITHOUT PASSING THROUGH THE LINE OF CARCASSES. DOORWAY AT RIGHT SIDE OF LAYOUT NEAR LAUNDRY CAN BE UTILIZED FOR REMOVAL OF HIDES AND UNBORN CALVES. DOORWAY AT BOTTOM OF LAYOUT BENEATH SMALL STOCK BLEEDING AREA CAN BE USED FOR REMOVAL OF CONDEMNED, INEDIBLE MATERIAL AND SHEEP PELTS.

RATES OF SLAUGHTER

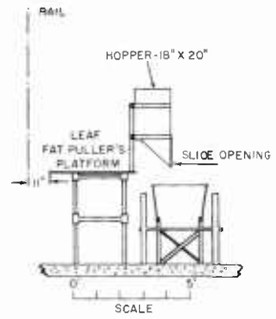
	PER HOUR
CATTLE	20
CALVES	20 TO 100
HOGS	20 TO 100
SHEEP	20 TO 125

MAXIMUM CONVEYOR CHAIN SPEEDS

	PER HOUR
CALVES	300 FEET
HOGS	300 FEET
SHEEP	375 FEET

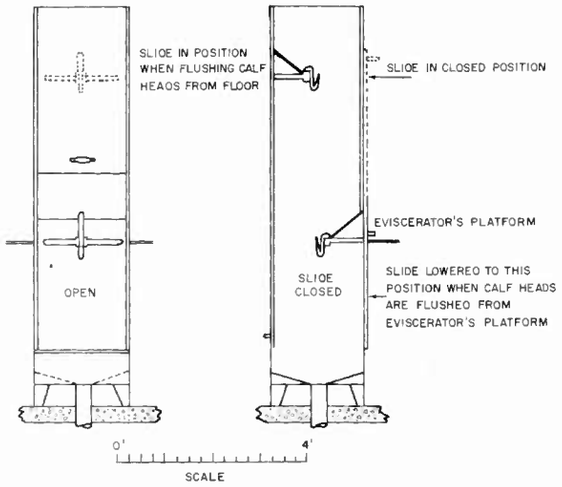
CARCASS CONVEYOR CHAIN AND VISCERA INSPECTION TABLE MOVEMENT ARE SYNCHRONIZED.
HEIGHT OF CARCASS DRESSING RAILS : 11'0".

DETAIL OF LEAF FAT HOLDING HOPPER



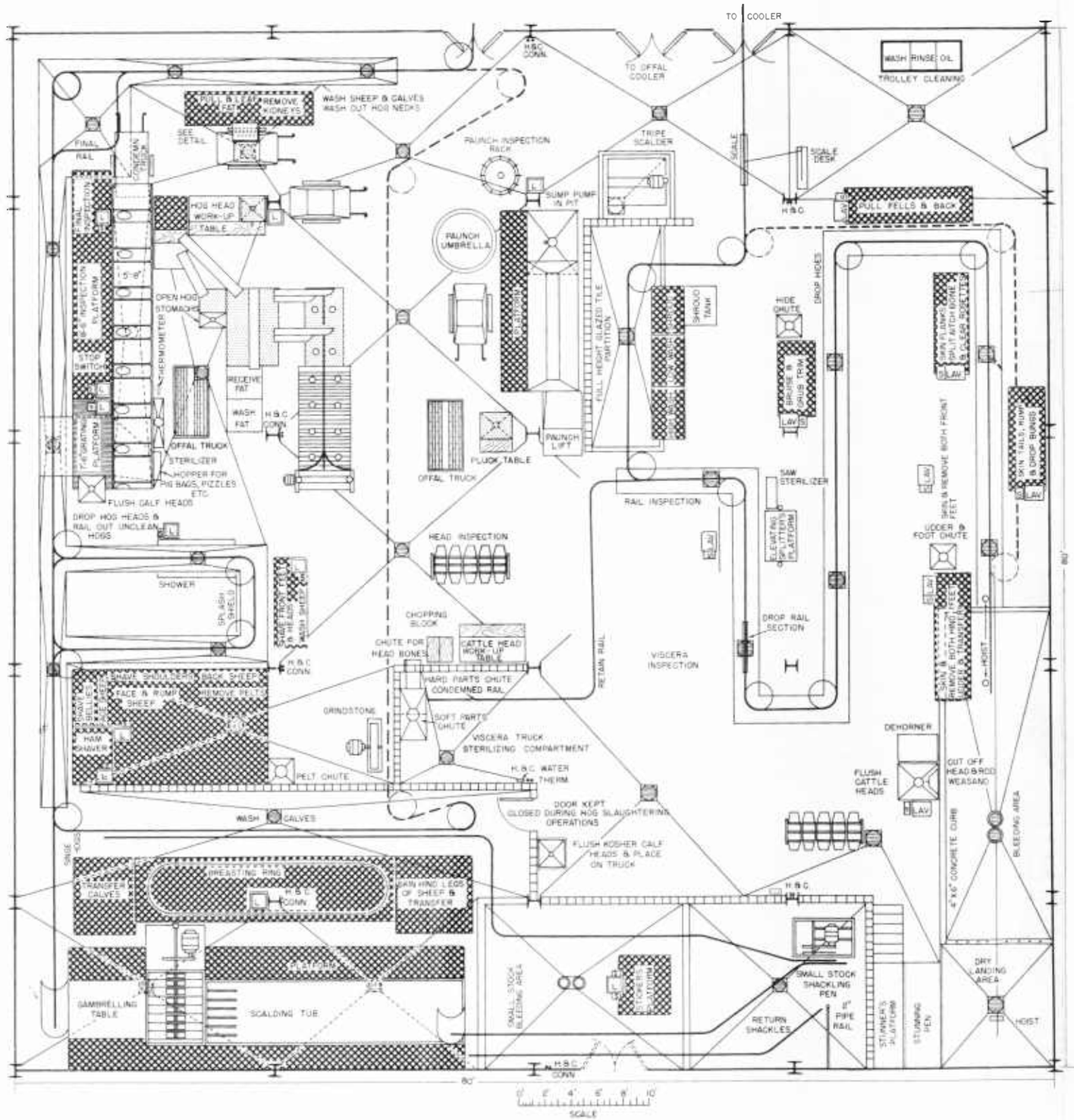
FAT IS HELD IN THIS HOPPER DURING PERIODS WHEN HOLDING TRUCK IS REMOVED FOR EMPTYING OR TO MAKE ROOM FOR REMOVAL OF CONDEMNED AND INEDIBLE PRODUCTS TRUCK.

DETAIL OF A TWO-LEVEL CALF HEAD FLUSHING CABINET



HOG CARCASSES SPACED 3'C TO C ON CONVEYOR CHAIN
HOGS, CALVES AND SHEEP GAMBRELLED 12" BELOW TOP OF DRESSING RAIL.
GUARD RAIL OF MOVING TOP VISCERA INSPECTION TABLE OMITTED OPPOSITE EVISCERATOR'S PLATFORM
MINUS FIGURES INDICATE DISTANCE BELOW TOP OF RAIL

Suggested Slaughtering Department for all Species: Combination Two Cattle Bed Single-Rail Hang-Off and Small Stock Layout



LAYOUT DESIGNED TO PERMIT HANDLING OF CATTLE CARCASSES BY "ON THE RAIL" OPERATION AND SIMULTANEOUSLY EITHER HOGS, CALVES, OR SHEEP.

RATES OF SLAUGHTER PER HOUR

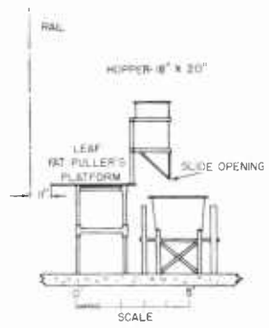
CATTLE	20 TO 40
CALVES	20 TO 100
HOGS	20 TO 100
SHEEP	20 TO 125

MAXIMUM CONVEYOR CHAIN SPEEDS PER HOUR

CATTLE	200
CALVES	300
HOGS	300
SHEEP	375

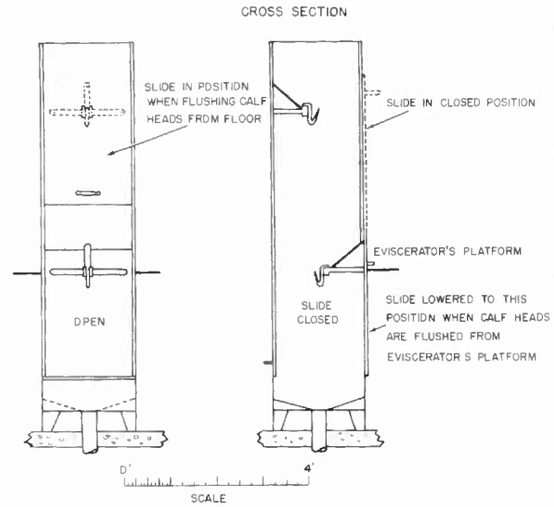
CARCASS CONVEYOR CHAIN AND VISCERA INSPECTION TABLE MOVEMENT ARE SYNCHRONIZED.
HEIGHT OF CARCASS DRESSING RAILS 11'0"

DETAIL OF LEAF FAT HOLDING HOPPER



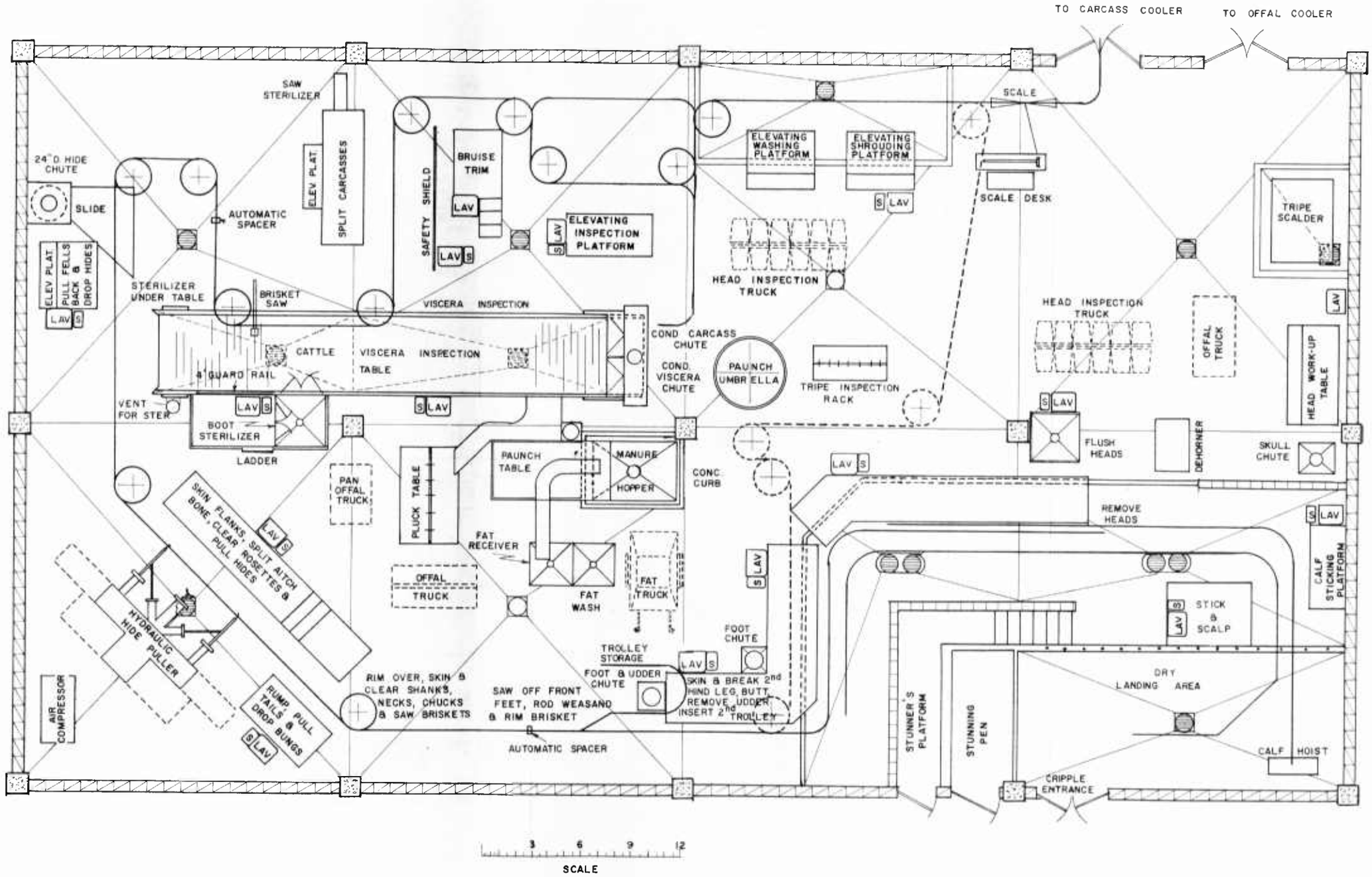
FAT IS HELD IN THIS HOPPER DURING PERIODS WHEN HOLDING TRUCK IS REMOVED FOR EMPTYING OR TO MAKE ROOM FOR REMOVAL OF CONDEMNED AND INEDIBLE PRODUCTS TRUCK.

DETAIL OF A TWO-LEVEL CALF HEAD FLUSHING CABINET



HOG CARCASSES SPACED 3'C TO C ON CONVEYOR CHAIN.
HOGS, CALVES AND SHEEP GAMBRELLED 12" BELOW TOP OF DRESSING RAIL.
GUARD RAIL OF MOVING TOP VISCERA INSPECTION TABLE OMITTED OPPOSITE EVISCERATOR'S PLATFORM.
MINUS FIGURES INDICATE DISTANCE BELOW TOP OF RAIL.
CATTLE CARCASSES ARE SPACED 5'C TO C ON CONVEYOR CHAIN.

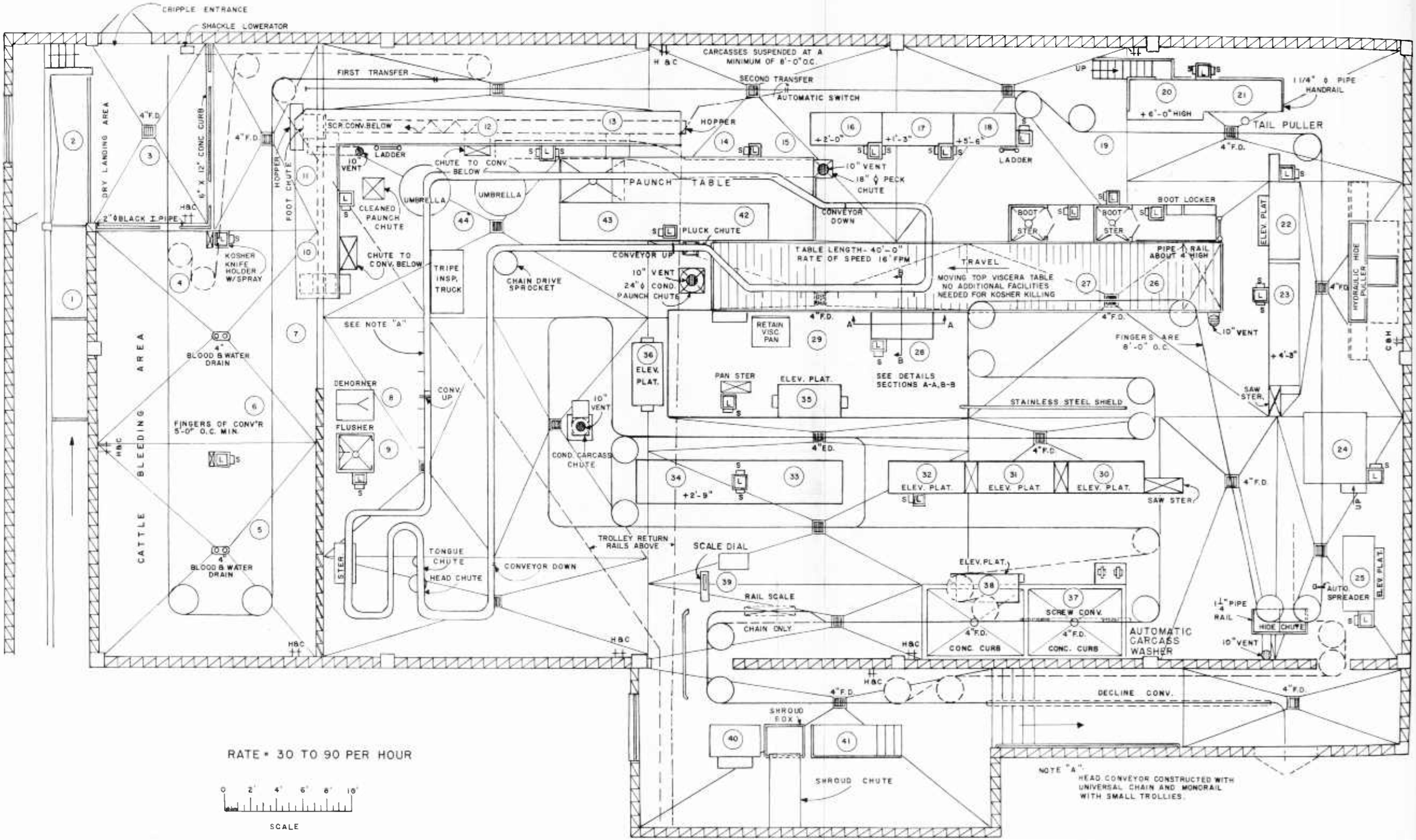
Suggested Slaughtering Department for All Species: Combination "On-the-Rail" Cattle and Small Stock Layout



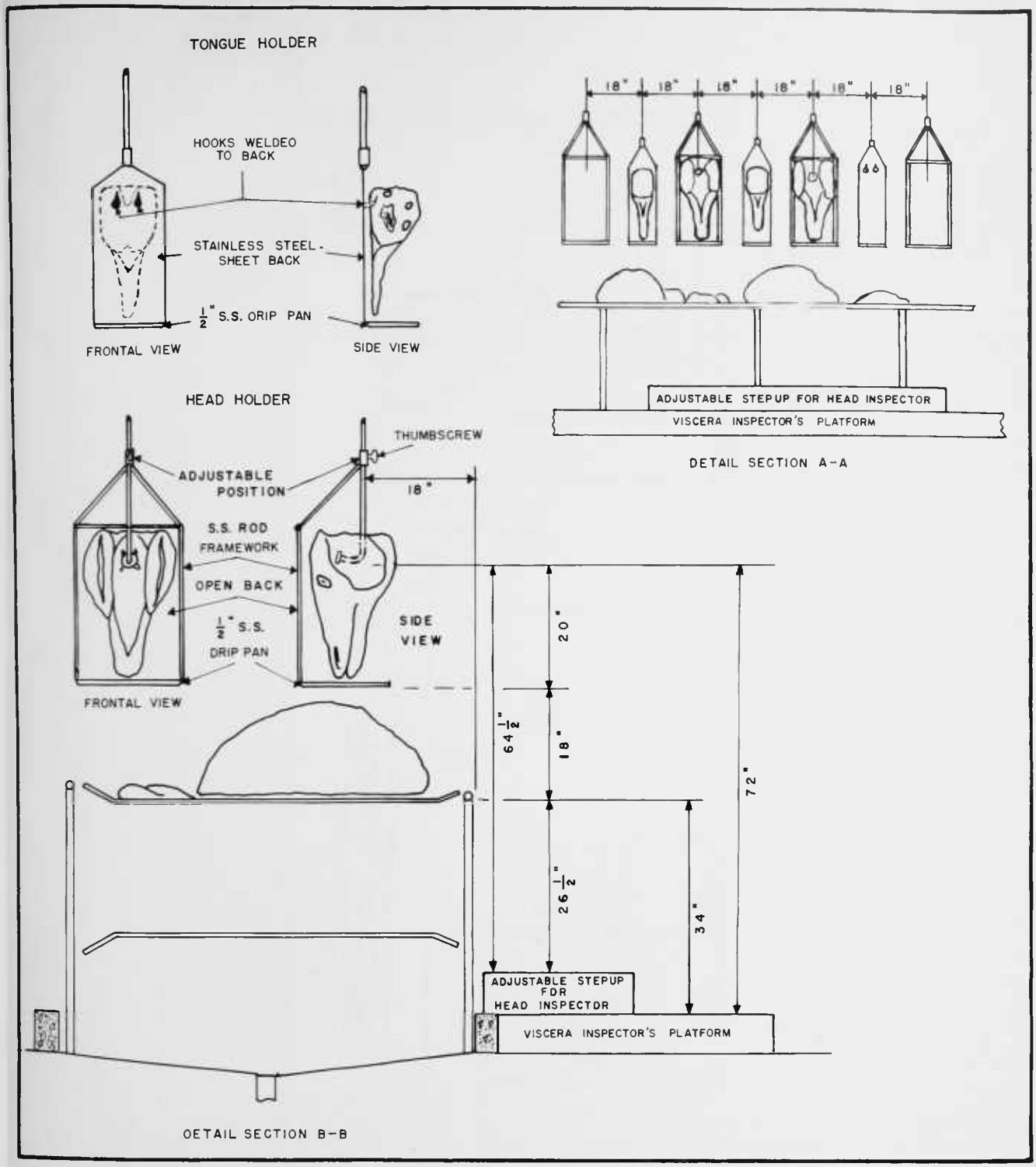
20 TO 50 CATTLE PER HOUR

Suggested Slaughtering Department "On-the-Rail" Layout for Cattle

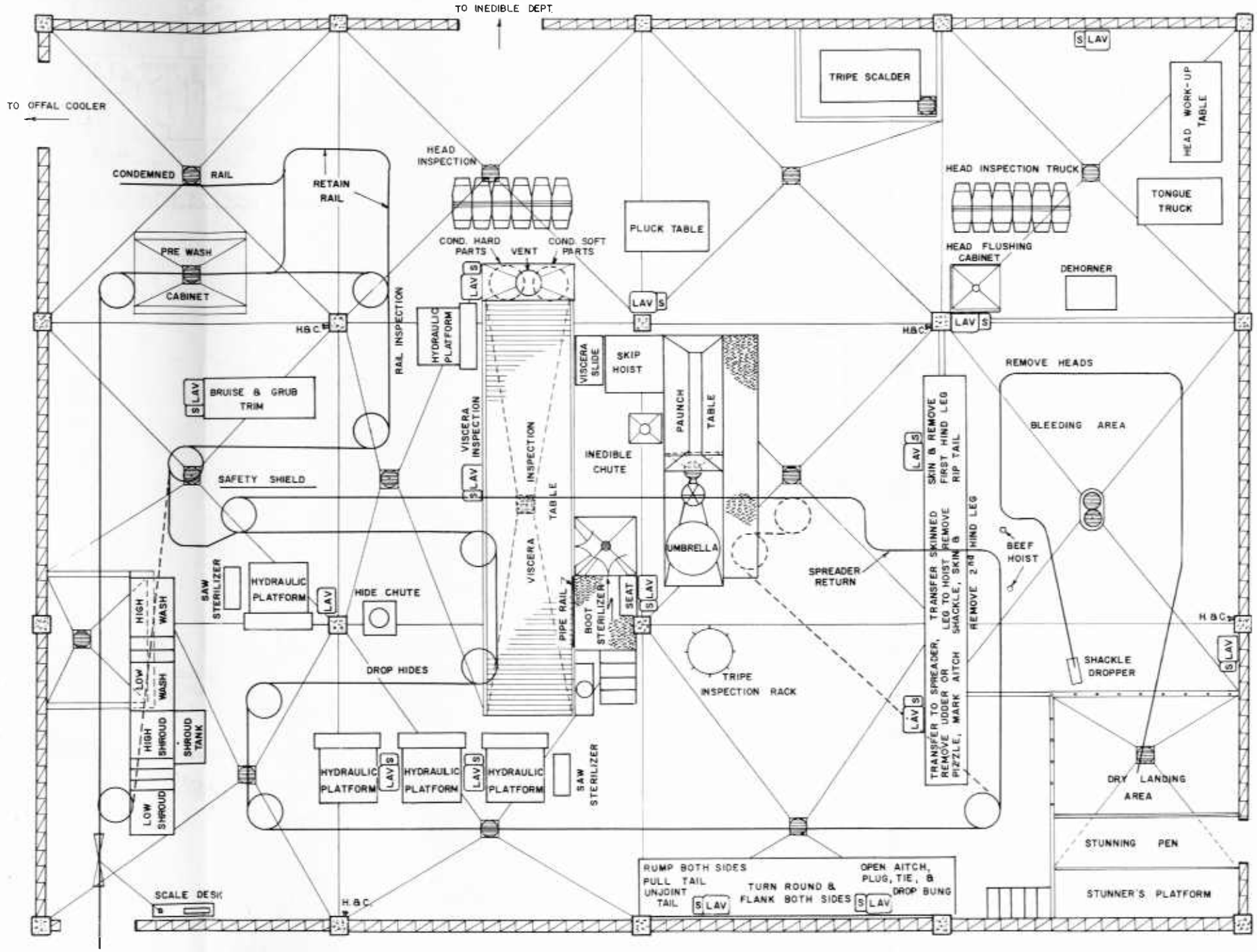
1 DRIVE & PEN CATTLE
2 PEN AND STUN CATTLE
3 SHACKLE, HOIST & HANG-OFF
4 STICK CATTLE
5-6 SKIN HEAD & ROD WEASAND
7 TAG AND REMOVE HEAD
8 DEHORN
9 FLUSH HEADS, REMOVE TONGUES & PLACE ON HOLDER, PLACE HEADS ON HOOKS
10 SKIN & SAW OFF 1st HIND LEG
11 CLEAN OUT BUTT & TRANSFER
12 RELEASE SHACKLE, SKIN & SAW OFF 2nd HIND LEG, REMOVE UDDER
13 SAW OFF 2nd HIND LEG, CLEAR OUT BUTT & TRANSFER
14-15 SKIN & SAW OFF FRONT FOOT
16 RIP OPEN
17 RIM OVER
18 SKIN CROTCH & FLANK
19 CLEAR ROSETTES & SHOULDERS
20-21 RUMP & PULL TAILS
22 HELP CROTCH & FLANK, SPLIT AITCH BONE
23 PULL HIDE & SAW BRISKET
24 LOW BACKING & PULL FELLS
25 HIGH BACKING, GRUB TRIMMING ON MEDIAN LINE
26-27 EVISCERATE
28 MID HEAD AND TONGUE INSPECTION
29 MID VISCERA INSPECTION
30-31 SAWING
32 BRUISE & GRUB TRIM
33 BRUISE TRIM
34 MID. RAIL INSPECTION — MAX. RATE
35 MID RAIL INSPECTION — MIN. RATE
36 MID FINAL INSPECTION
37 CARCASS WASHER — MECHANICAL
38 REMOVE TAILS & MANUAL WASH
39 SCALE
40 HIGH SHROUD
41 LOW SHROUD
42 REMOVE PASSEO VISCERA & PLUCK
43 SEPARATE VISCERA
44 WASH PAUNCHES



Suggested Slaughtering Department "On-the-Rail" Layout for Cattle

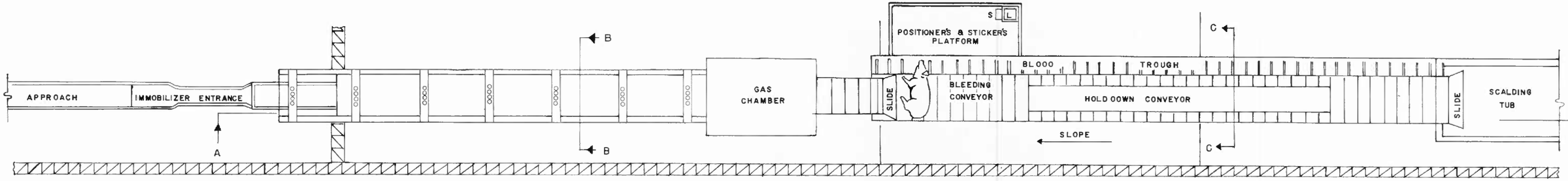


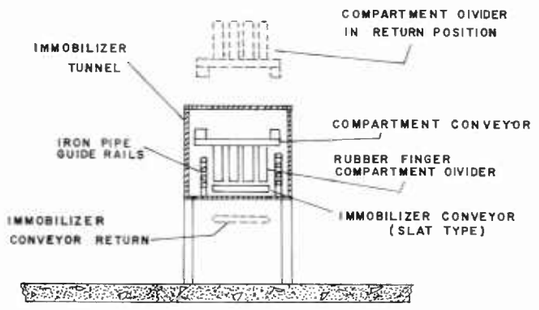
Details of Head Inspection Conveyor Shown on Drowing on poge 64.



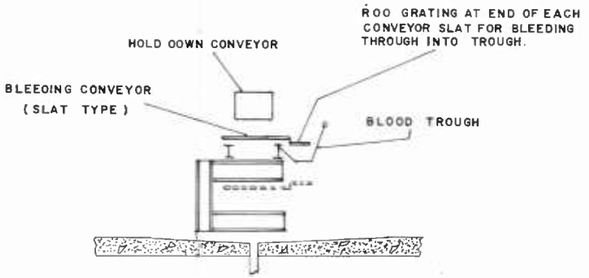
20 TO 30 CATTLE PER HOUR

Suggested Slaughtering Department "On-the-Rail" Layout for Cattle

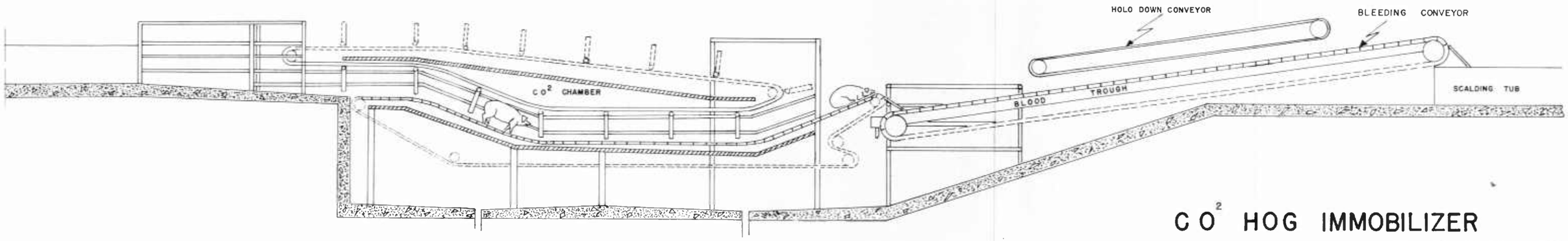




SECTION B–B



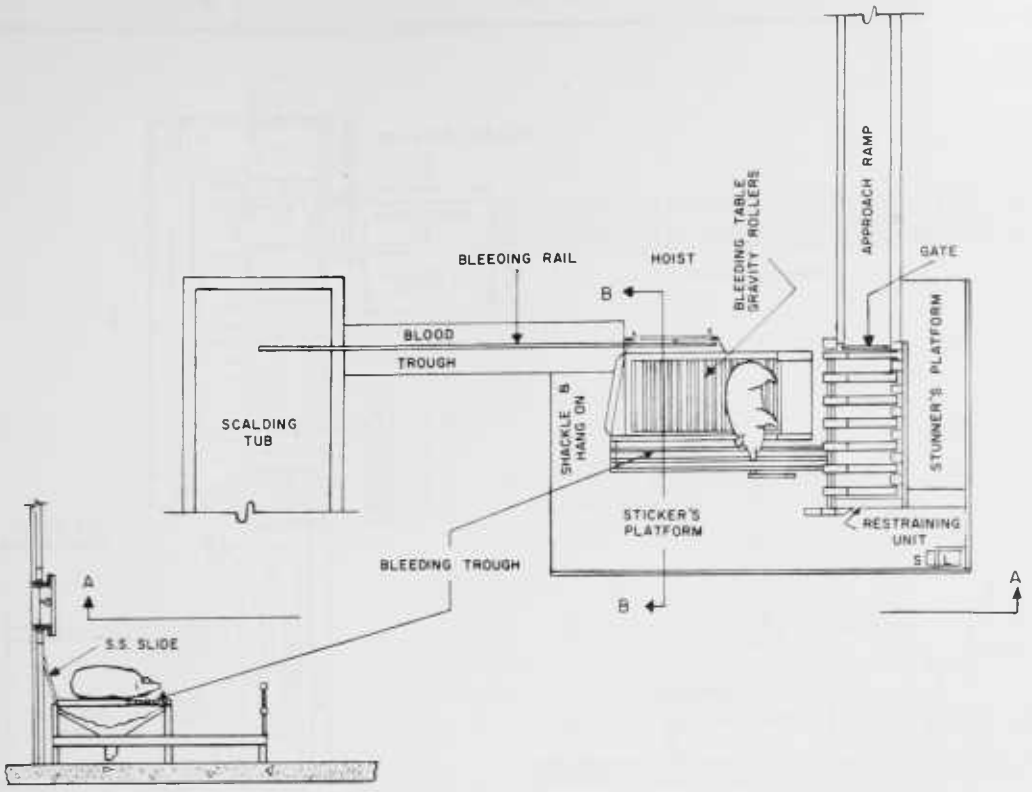
SECTION C–C



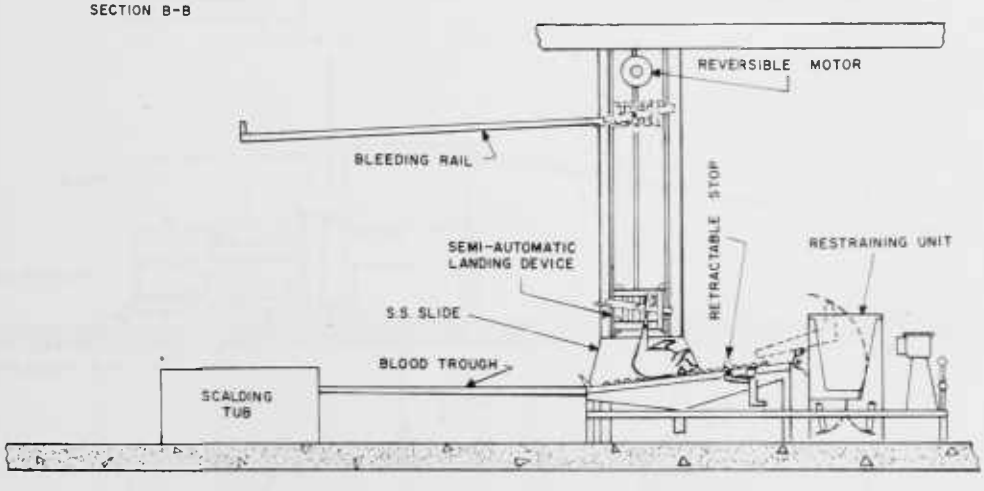
ELEVATION SECTION A–A

CO^2 HOG IMMOBILIZER
RATE 300 TO 600 PER HOUR

Typical CO_2 Immobilizing Facilities for Hogs



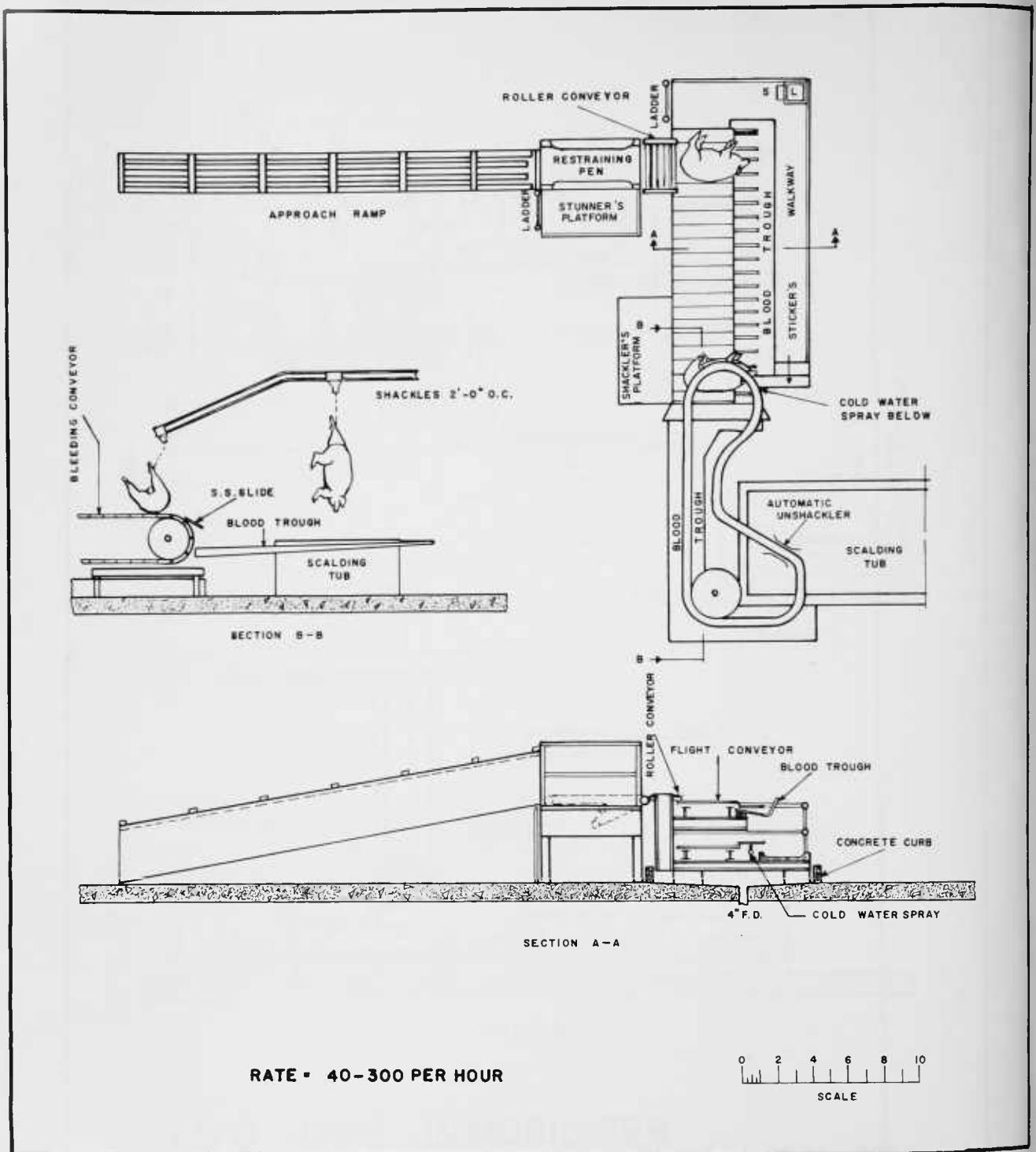
SECTION B-B



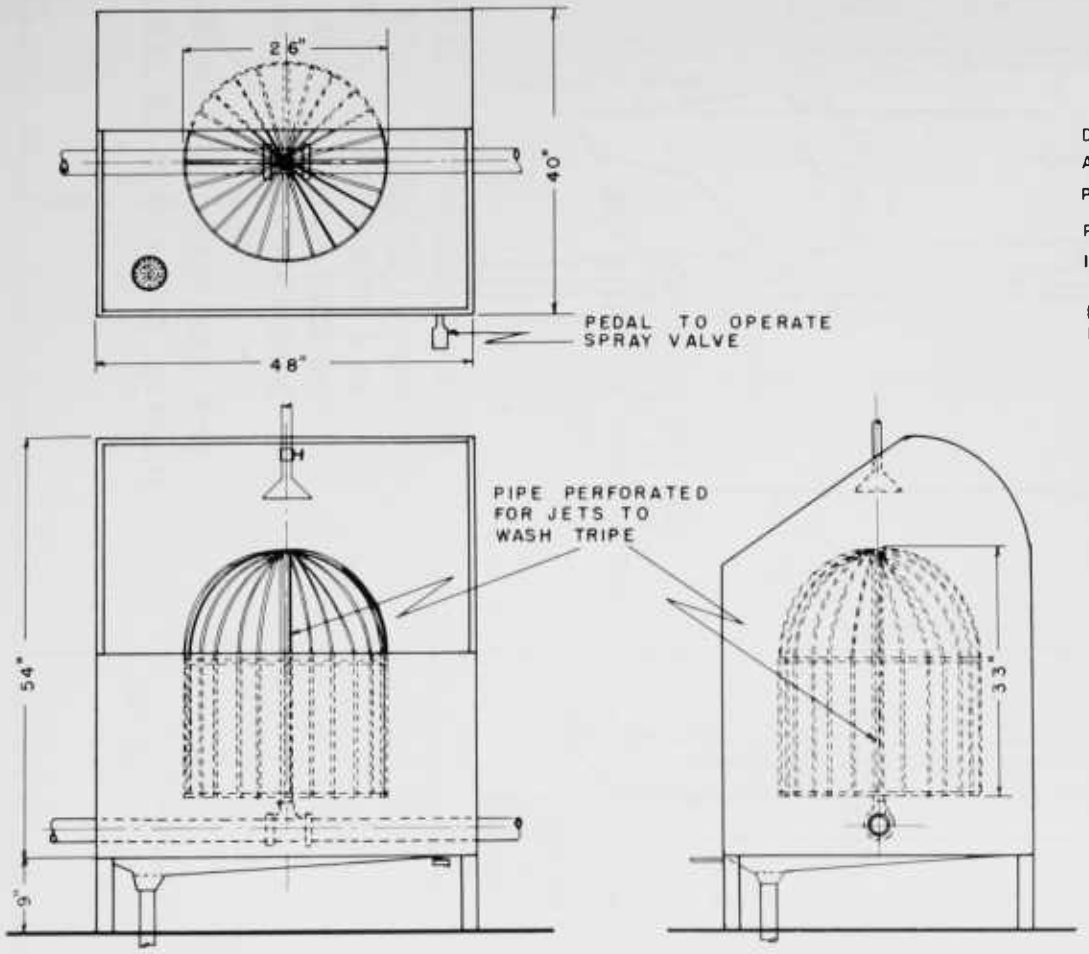
SECTION A-A

RATE = 10 TO 40 PER HOUR

Typical Electric Stunning Facilities for Hogs



Typical Electric Stunning Facilities for Hogs

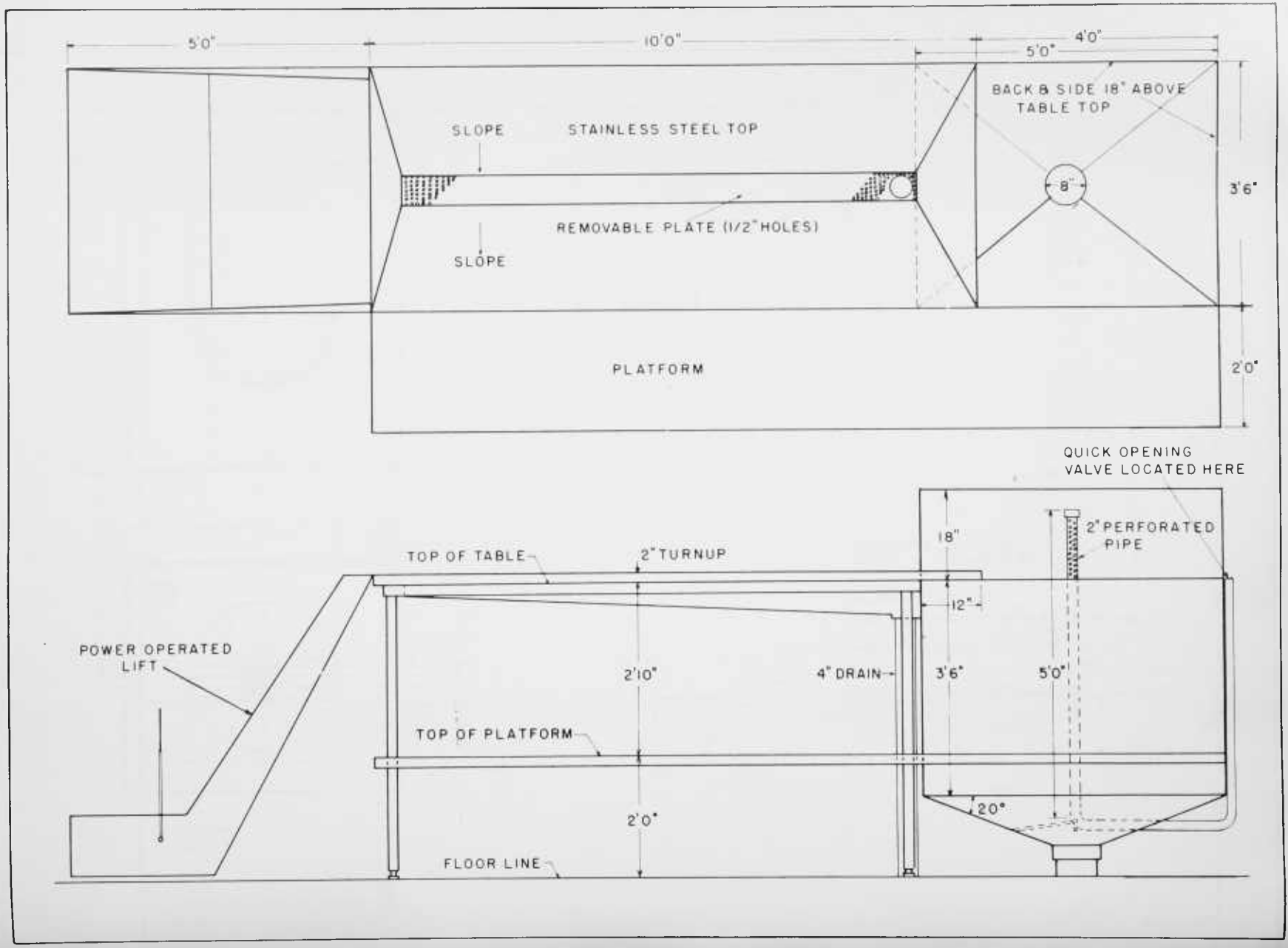


DOME IS CONSTRUCTED OF ½" ⌀ RODS ABOUT 1½" APART AND MOUNTED ON A PIPE SO DOME CAN REVOLVE

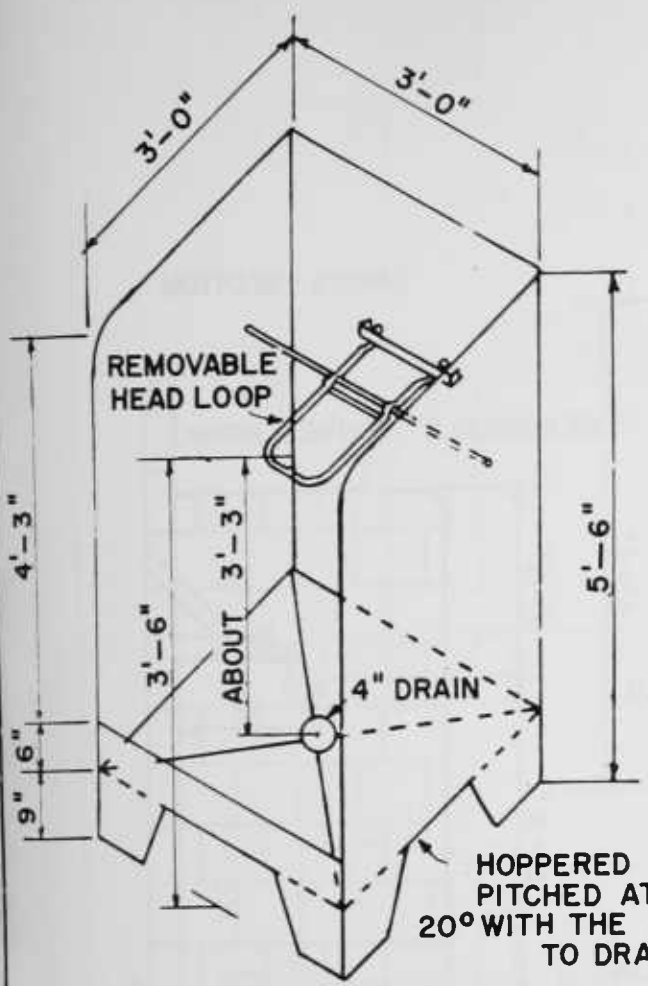
PIPE ON WHICH DOME IS MOUNTED IS PERFORATED

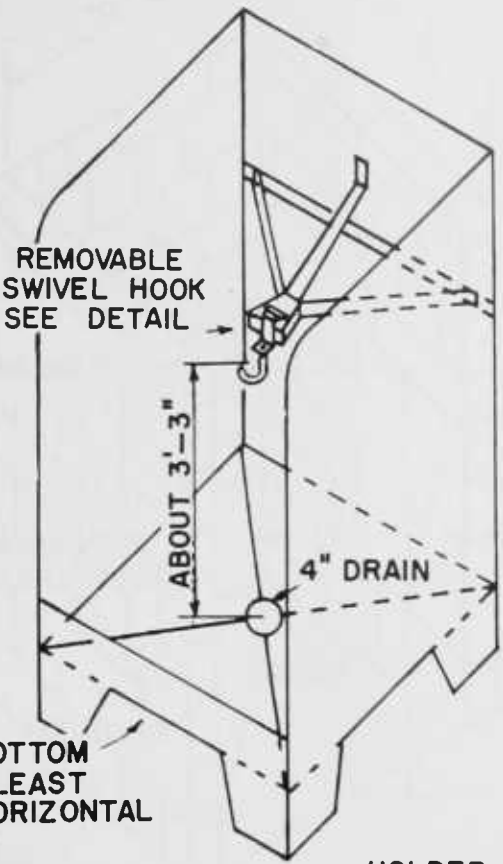
DRAIN IS CONNECTED TO THE DRAINAGE SYSTEM

Cattle Tripe Washing Facilities



Cattle Viscera Separating Table



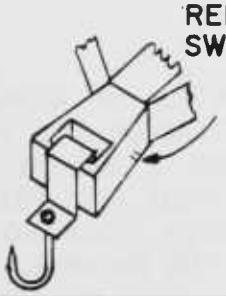


HOPPERED BOTTOM
PITCHED AT LEAST
20° WITH THE HORIZONTAL
TO DRAIN

CONSTRUCTED OF RUST-RESISTING METAL (STAINLESS STEEL), DIRECTLY CONNECTED TO DRAINAGE SYSTEM THROUGH A DEEP SEAL TRAP. AREA IN WHICH EQUIPMENT IS LOCATED HAS SEPARATE DRAINAGE.

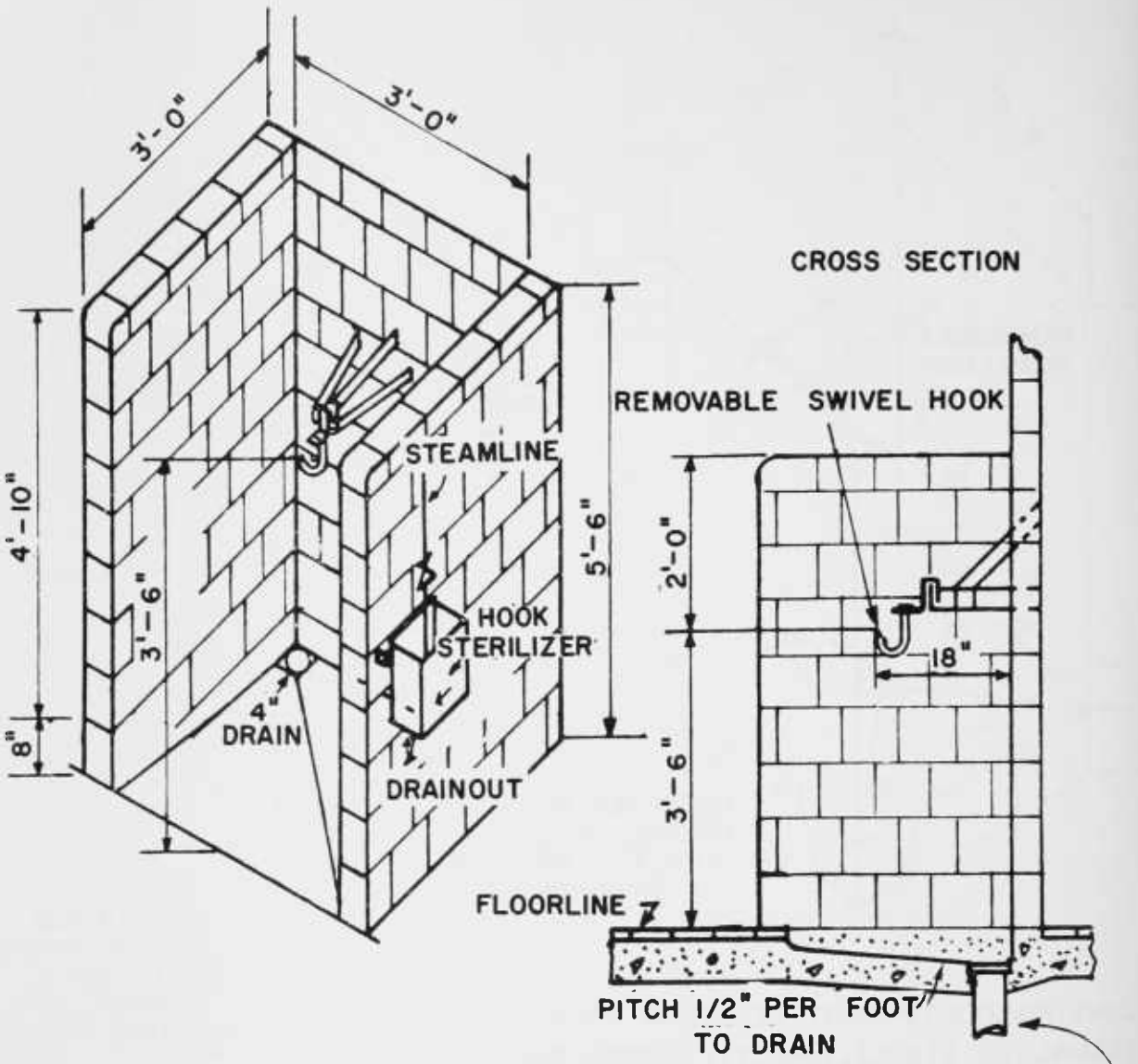
DIMENSIONS OF FLUSHER USED ONLY FOR CALF HEADS MAY BE 2'-0" x 2'-0" IN PLAN.

HOLDER HAS
SLOT TO PERMIT
INSERTION &
REMOVEL OF
SWIVEL HOOK.



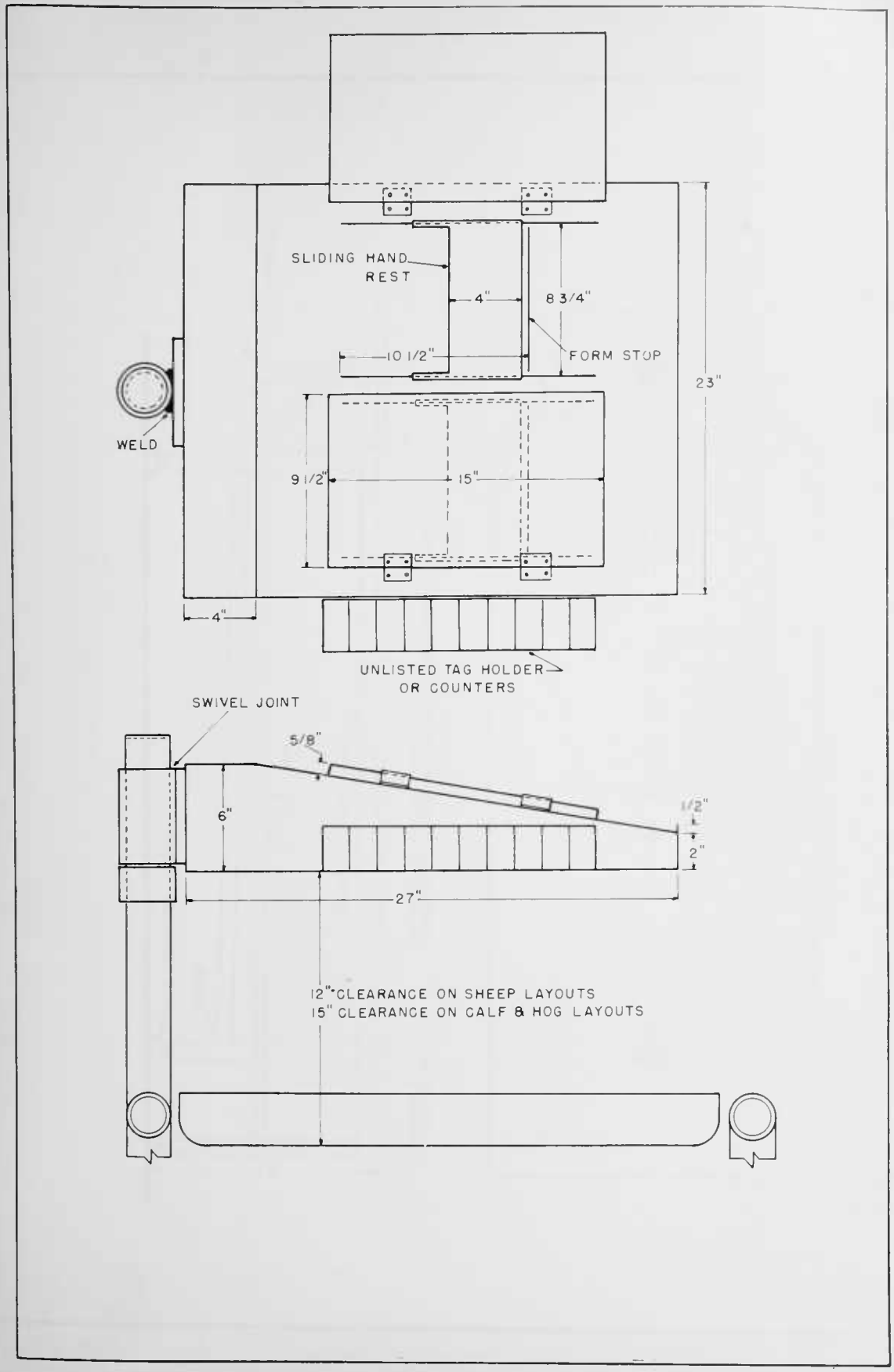
DETAIL OF REMOVABLE
SWIVEL HOOK

Cattle Head Flushing Compartment

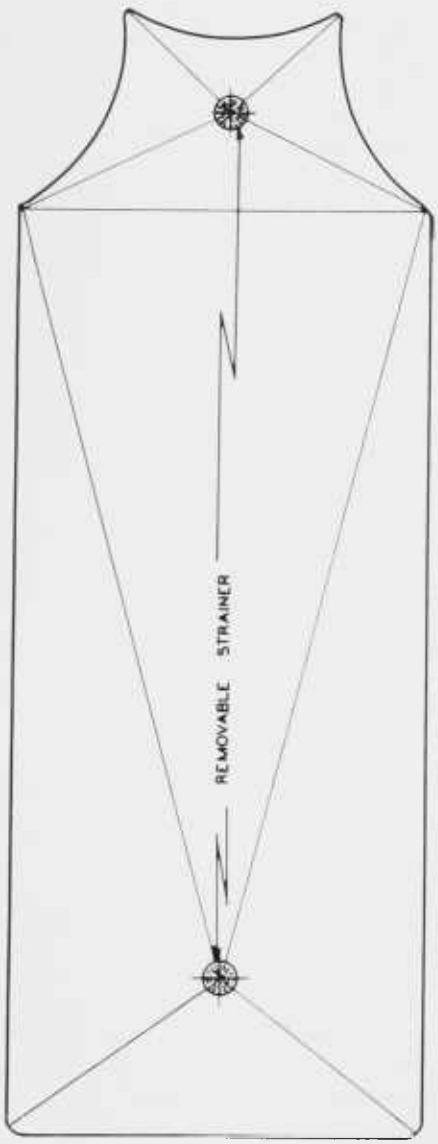


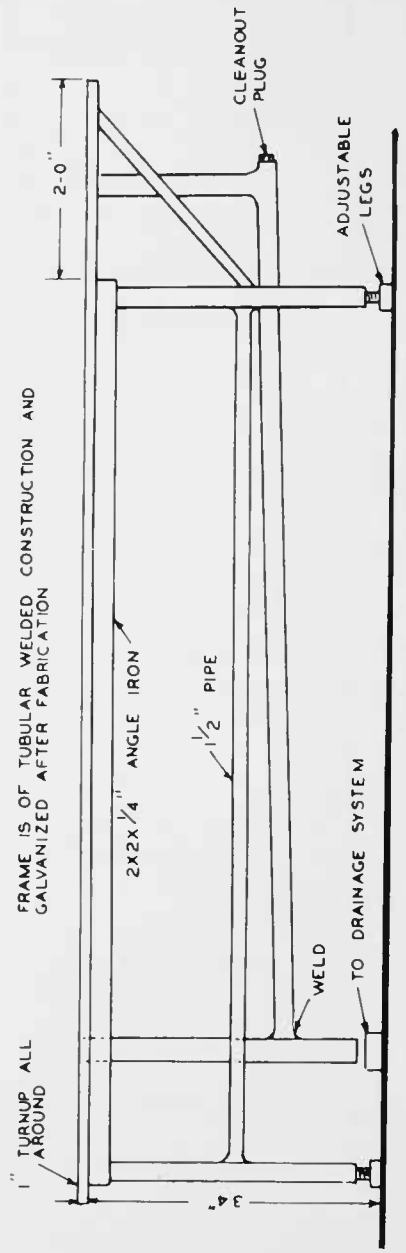
CONSTRUCTED OF GLAZED TILE. THE BOTTOM OF THE FLUSHER IS DEPRESSED 3" BELOW THE FLOOR LINE, PITCHED 1/2" PER FOOT TO FLOOR DRAIN LOCATED AT THE BACK OF THE WASHER.

Cattle Head Flushing Compartment



Final Inspector's Desk Over Moving Viscera Inspection Table





Sausage Stuffing Table

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